

Lexan* Resin FXD1413T

Americas: COMMERCIAL

Clear PC-siloxane copolymer with excellent processability, in special light diffusion colors. Medium flow. Improved toughness compared to medium flow standard PC in same color. Color package may affect performance.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|--|---------------|---------------------|-------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 610 | kgf/cm ² | ASTM D 638 |
| Tensile Stress, brk, Type I, 50 mm/min | 670 | kgf/cm ² | ASTM D 638 |
| Tensile Strain, yld, Type I, 50 mm/min | 6 | % | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 130 | % | ASTM D 638 |
| Tensile Modulus, 50 mm/min | 23100 | kgf/cm ² | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 880 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 23100 | kgf/cm ² | ASTM D 790 |
| Tensile Stress, yield, 50 mm/min | 57 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 58 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 5.6 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 116 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2310 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 91 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2190 | MPa | ISO 178 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 90 | cm-kgf/cm | ASTM D 256 |
| Izod Impact, notched, -30°C | 81 | cm-kgf/cm | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 836 | cm-kgf | 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 | NB | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80*10*3 +23°C | 65 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*3 -30°C | 55 | kJ/m ² | ISO 180/1A |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. Not to be used for part or tool design.

3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.

4) Own measurement according to UL.

Source, GMD, Last Update:

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------------|----------------|
| IMPACT | | | |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 70 | kJ/m ² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 60 | 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 | NB | kJ/m ² | ISO 179/1eU |
| THERMAL | | | |
| Vicat Softening Temp, Rate A/50 | 141 | °C | ASTM D 1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 124 | °C | ASTM D 648 |
| CTE, -40°C to 95°C, flow | 7.15E-05 | 1/°C | ASTM E 831 |
| CTE, -40°C to 95°C, xflow | 7.93E-05 | 1/°C | ASTM E 831 |
| CTE, 23°C to 80°C, flow | 7.15E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 80°C, xflow | 7.93E-05 | 1/°C | ISO 11359-2 |
| Ball Pressure Test, 125°C +/- 2°C | PASS | - | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50 | 141 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 143 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 119 | °C | ISO 75/Af |
| PHYSICAL | | | |
| Specific Gravity | 1.19 | - | ASTM D 792 |
| Mold Shrinkage on Tensile Bar, flow (2) | 0.4 - 0.8 | % | SABIC Method |
| Mold Shrinkage, flow, 3.2 mm | 0.4 - 0.8 | % | SABIC Method |
| Mold Shrinkage, xflow, 3.2 mm | 0.4 - 0.8 | % | SABIC Method |
| Melt Flow Rate, 300°C/1.2 kgf | 10 | g/10 min | ASTM D 1238 |
| Density | 1.19 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/sat) | 0.13 | % | ISO 62 |
| Moisture Absorption (23°C / 50% RH) | 0.09 | % | ISO 62 |
| Melt Volume Rate, MVR at 220°C/5.0 kg | 9 | cm ³ /10 min | ISO 1133 |

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| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 120 | °C |
| Drying Time | 3 - 4 | hrs |
| Drying Time (Cumulative) | 48 | 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 | 215 - 295 | °C |
| Mold Temperature | 70 - 95 | °C |
| Back Pressure | 0.3 - 0.7 | MPa |
| Screw Speed | 40 - 70 | rpm |
| Shot to Cylinder Size | 40 - 60 | % |
| Vent Depth | 0.025 - 0.076 | mm |

• NOTE: Back Pressure, Screw Speed, Shot to Cylinder Size and Vent Depth are only mentioned as general guidelines. These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

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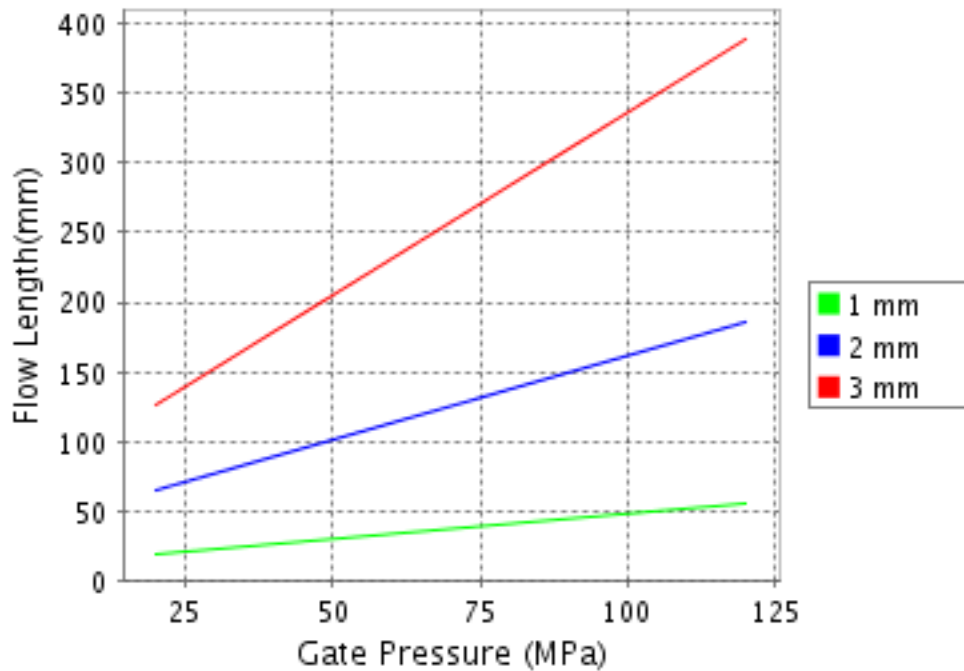
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

Lexan® FXD1413T

Melt Temperature : 305°C

Mold Temperature : 85°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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