



DRAKE PAI THIN FILM & SHEET

DESCRIPTION

DRAKE PAI Thin Sheet & Film products are made from a non-reinforced polyamide-imide. They exhibit the high strength, surface hardness, temperature and wear resistance that is typical of unreinforced PAI resins and machinable shapes.

PRODUCT FEATURES

- Excellent thermal and electrical insulation
- Easily die-cut and fabricated
- Bonds to other substrates including metals
- Performs from cryogenic to 260°C / 500°F, depending on application

Material Notes: PAI resin grade is similar to Torlon 4203L. Drake Certificate of Compliance included. Available in 0.3mm (0.012") up to 2mm (0.079") thicknesses.

TYPICAL PROPERTIES

| PHYSICAL PROPERTIES | METRIC | IMPERIAL | |
|---|-------------|------------------------------------|---------------------------------------|
| Specific Gravity | 1.41 | 1.41 | ASTM D792 |
| Water Absorption | 0.4% | 0.4% | Immersion, 24hr; ASTM D570 |
| Water Absorption at Saturation | 1.7% | 1.7% | Immersion; ASTM D570 |
| MECHANICAL PROPERTIES ¹ | | | |
| Tensile Strength, Ultimate | 141 MPa | 20,400 psi | Drake Method ³ ; ASTM D638 |
| Elongation at Break ² | 28% | 28% | Drake Method ³ ; ASTM D638 |
| Tensile Modulus | 4700 MPa | 680,000 psi | Drake Method ³ ; ASTM D638 |
| THERMAL PROPERTIES | | | |
| Glass Transition Temp./T _g | 275° C | 527° F | ASTM D3418 |
| Heat Deflection Temperature (264 PSI) | 278° C | 532° F | E831 TMA |
| Coefficient of Linear Thermal Expansion | 30.6 ppm/°C | 17.0 ppm/°F | DIN 51909 |
| Thermal Conductivity | 0.26 W/m*K | 1.80 Btu*in/hr*ff ² *°F | ASTM F433 |

¹The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated from test specimens injection molded under optimum conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity as a result of processing, and fiber alignment inherent in all reinforced plastic shapes, regardless of process. For additional information on the effects of fiber alignment, see Drake Fiber Orientation Diagram, available on the Resource page of our website.

²Elongation properties are dependent on crystallization and vary by manufacturing methods & cooling rates.

³Tensile bars were prepared and tested per ASTM D638 Type V. 2mm (0.079") thick material was utilized, deviating from the 3.2mm (0.125") standard thickness used in ASTM D638 Type V bars. The values reported are averages from 5 test specimens. Application specific testing should be done to verify material suitability.