TORLON® 4203L & 4203 PAI

Unreinforced, High Impact Resistance

DESCRIPTION

TORLON® 4203L is a non-reinforced polyamide-imide. It is the toughest and most impact resistant of Torlon grades. It has excellent dielectric properties and is also the best thermal insulator.

TYPICAL APPLICATIONS:

- Rollers, wheels, and balls
- Thermal insulators and isolators
- Valve components requiring high strength and dimensional stability
- Aerospace electrical components requiring high strength, heat resistance, and V-0 flammability.

Material Notes: *Resin used to produce Torlon 4203L shapes were historically designated as 4203. As of 2020, most unfilled Torlon produced by Drake Plastics are made from 4203L resin. Other manufacturers still produce shapes from 4203 resin, however.*

EXTRUDED SHAPES PROPERTIES

PHYSICAL PROPERTIES	METRIC	IMPERIAL	METHODS
Specific Gravity	1.41 g/cc	0.051 lb/in^3	ASTM D792
Water Absorption	0.4%	0.4%	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	1.7%	1.7%	Immersion; ASTM D570(2)
MECHANICAL PROPERTIES[1]			
Hardness, Rockwell M		M120	ASTM D785
Hardness, Rockwell		E80	ASTM D785
Hardness, Shore D		90	ASTM D2240
Tensile Strength, Ultimate	138 MPa	20,000 PSI	ASTM D638
Elongation at Break	20%	20%	ASTM D638
Tensile Modulus	4,136 MPa	600,000 PSI	ASTM D638
Flexural Modulus	4,136 MPa	600,000 PSI	ASTM D790
Flexural Yield Strength	165 MPa	24,000 PSI	ASTM D790
Compressive Strength	165 MPa	24,000 PSI	10% Def.; ASTM D695
Compressive Modulus	3,296 MPa	478,000 PSI	ASTM D695
Izod Impact (notched)	105 J/m	2.0 ft-lbs/in	ASTM D256 Type A
THERMAL PROPERTIES			
Glass Transition Temp./T_g	275° C	527° F	ASTM D3418
Heat Deflection Temperature (264 PSI)	278° C	532° F	ASTM TMA
Coefficient of Linear Thermal Expansion	3.1 x 10^{-5} C^{-1}	1.7 x 10^{-5} F^{-1}	E831 TMA

[1]The 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.