

Solvay Specialty Polymers Torlon® 4630 Polyamide-imide (PAI) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyamide-imide (PAI) , Polyamide-Imide, Extruded

Material Notes:

Torlon 4630 is an injection-moldable, wear-resistant grade of polyamide-imide (PAI), that has been formulated to give outstanding wear resistance in non-lubricated applications. Torlon PAI has the highest strength and stiffness of any thermoplastic up to 275°C (525°F). It has outstanding resistance to wear, creep and chemicals. Potential applications for Torlon 4630 polyamide-imide include thrust washers, seal rings, sliding vanes, bobbins, bushings, clutch rollers and pistons. Injection Notes: Minimum drying times are: 3 hours at 350°F (177°C), 4 hours at 300°F (149°C), or 16 hours at 250°F (121°C). Compression Ratio between 1:1 and 1.5:1 Begin hold pressure at a high setting 6,000-8,000 psi (41.37-55.16 MPa), for several seconds, then drop off to 3,000-5,000 psi (20.69-34.48 MPa), for the duration of the hold pressure sequence. Molded parts must be post cured. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Torlon-4630-Polyamide-imide-PAI-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.56 g/cc	1.56 g/cc	ASTM D792
Water Absorption	0.18 %	0.18 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	

Mechanical Properties	Metric	English	Comments
Tensile Strength	81.4 MPa	11800 psi	ASTM D638
Elongation at Break	1.9 %	1.9 %	ASTM D638
Tensile Modulus	7.45 GPa	1080 ksi	ASTM D638
Flexural Strength	131 MPa	19000 psi	ASTM D790
Flexural Modulus	6.83 GPa	991 ksi	ASTM D790
Compressive Strength	99.3 MPa	14400 psi	ASTM D695
Izod Impact, Notched	0.480 J/cm	0.899 ft-lb/in	ASTM D256
	1.60 J/cm	3.00 ft-lb/in	ASTM D256
Coefficient of Friction, Dynamic	0.030	0.030	Lubricated: 4 m/s, 5.2 MPa; ASTM D1894
	0.15	0.15	Lubricated: 0.25 m/s, 6.9 MPa; ASTM D1894
	0.32	0.32	Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi); ASTM D3702
			Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25

Mechanical Properties	0.32 Metric	0.32 English	psi; ASTM D3702 Comments
K (wear) Factor	2.01 x 10 ⁻⁸ mm ³ /N-M	1.00 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi); ASTM D3702
	12.1 x 10 ⁻⁸ mm ³ /N-M	6.00 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi); ASTM D3702
	22.2 x 10 ⁻⁸ mm ³ /N-M	11.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Lubricated: 0.375 m/s, 6.9 MPa (75 fpm, 1000 psi); ASTM D3702
	27.2 x 10 ⁻⁸ mm ³ /N-M	13.5 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi); ASTM D3702

Thermal Properties	Metric	English	Comments
CTE, linear	3.60 μm/m-°C	2.00 μin/in-°F	ASTM D696
Deflection Temperature at 1.8 MPa (264 psi)	279 °C	534 °F	Unannealed; ASTM D648

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	304 °C	579 °F	
Nozzle Temperature	371 °C	700 °F	
Mold Temperature	199 - 216 °C	390 - 421 °F	
Drying Temperature	177 °C	351 °F	
Dry Time	3.00 hour	3.00 hour	
Moisture Content	0.050 %	0.050 %	
Back Pressure	6.89 MPa	999 psi	
Screw Speed	50 - 100 rpm	50 - 100 rpm	

Descriptive Properties	Value	Comments
Additive	PTFE + Graphite Lubricant	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Flame Retardant	

Descriptive Properties	Value	Comments
	Good Creep Resistance	
	Good Wear Resistance	
	High Heat Resistance	
	High Stiffness	
	High Temperature Strength	
	Low Friction	
Forms	Pellets	
Generic	PAI	
Processing Method	Injection Molding	
	Machining	
	Profile Extrusion	
Screw L/D Ratio	18.0:1.0 to 24.0:1.0	
Uses	Automotive Applications	
	Bearings	
	Bushings	

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