Torlon® 4645

Polyamide-imide

Solvay Specialty Polymers

Message:

Torlon 4645 is an injection moldable wear-resistant polyamide-imide (PAI) resin that mainly provides excellent wear resistance for lubricating wear products. At 275 °C(525 °F), Torlon PAI has more strength and rigidity than all thermoplastics, and has excellent wear resistance, creep resistance and chemicals. Potential applications of Torlon 4645 polyamide-imide include thrust washers, seals, sliding vanes, spools, bushings, clutch rollers, and pistons.

General Information	
Additive	Carbon fiber PTFE lubricant
Features	Semi-conductive Low friction coefficient Rigidity, high High temperature strength Good creep resistance Good chemical resistance Good wear resistance Heat resistance, high Self-lubricating Flame retardancy
Uses	Bushing Seals Application in Automobile Field spool Thrust washer Bearing
RoHS Compliance	Contact manufacturer
Forms	Particle
Processing Method	Machining Profile extrusion molding Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.57	g/cm³	ASTM D792
Water Absorption (24 hr)	0.25	%	ASTM D570
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	18600	MPa	ASTM D638
Tensile Strength	114	MPa	ASTM D638
Tensile Elongation (Break)	0.80	%	ASTM D638

Flexural Modulus	12400	MPa	ASTM D790
Flexural Strength	154	MPa	ASTM D790
Compressive Strength	157	MPa	ASTM D695
Shear Strength			ASTM D732
23°C	85.5	MPa	ASTM D732
150°C	60.7	MPa	ASTM D732
Coefficient of Friction			ASTM D1894
-- [1]	0.070		ASTM D1894
-- [2]	0.090		ASTM D1894
Wear Factor			ASTM D3702
Lubrication: 4 m/s, 5.2 MPa (800 fpm, 750 psi)	0.300	$in^3 \cdot min^{-10}/ft \cdot lb \cdot hr$	ASTM D3702
Lubrication: 0.375 m/s, 6.9 MPa (75 fpm, 1000 psi)	1.60	$in^3 \cdot min^{-10}/ft \cdot lb \cdot hr$	ASTM D3702
Coefficient of Linear Thermal Expansion	1.4E-5	cm/cm/°C	ASTM D696

Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	37	J/m	ASTM D256
Unnotched Izod Impact	110	J/m	ASTM D256

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	281	°C	ASTM D648

Injection	Nominal Value	Unit
Drying Temperature	177	°C
Drying Time	3.0	hr
Suggested Max Moisture	0.050	%
Rear Temperature	304	°C
Nozzle Temperature	371	°C
Mold Temperature	199 - 216	°C
Back Pressure	6.89	MPa
Screw Speed	50 - 100	rpm
Screw L/D Ratio	18.0:1.0 - 24.0:1.0	

Injection instructions

最低干燥要求:350 °F (177°C)温度下3小时, 300 °F (149°C) 温度下4小时,或250 °F (121°C) 温度下16小时. 压缩比:1:1~1.5:1
开始时,压力设置成较高的6,000-8,000 psi ,几秒钟后,降至3,000-5,000psi(20.69-34.48MPa) ,进行保压. 成型部件需进行后固化.

NOTE	
1.	Lubrication: 4 m/s, 5.2 MPa (800 fpm, 750 psi)
2.	Lubrication: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi)

Recommended distributors for this material

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