

Solvay Specialty Polymers Torlon® 4435 Polyamide-imide (PAI) (Unverified Data**)

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

Material Notes:

Torlon 4435 is a polyamide-imide resin specifically designed to provide exceptionally low wear performance in non-lubricated applications even at high pressure and velocity (PV) conditions. Not only is Torlon 4435 particularly suited to applications where lubrication is impossible or undesirable, it provides an additional margin of safety for lubricated systems in the event that lubrication is lost. The impressive flexural and compressive stiffness from cryogenic to elevated temperatures allows it to be used for demanding load-bearing applications. The low coefficient of thermal expansion provides the ability to meet close tolerances over a wide temperature range. Due to its electrically dissipative property, this grade may also be considered for anti-static functions. Specific applications where Torlon 4435 may be used are thrust washers, seal rings, sliding vanes, bobbins, bushings, clutch rollers and pistons. The resin can be injection molded into complex shapes. - High flow: Torlon 4435-HFInjection Notes: Minimum drying conditions: 3 hours at 350°F, 4 hours at 300°F, or 16 hours at 250°F. Compression Ratio: 1:1 to 1.5:1 Begin hold pressure at 6000-8000 psi for several seconds, then drop off to 3000-5000 psi 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-4435-Polyamide-imide-PAI-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.59 g/cc	1.59 g/cc	ASTM D792
Water Absorption	0.12 %	0.12 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0014 cm/cm	0.0014 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength	93.8 MPa	13600 psi	ASTM D638
Tensile Stress	110 MPa	16000 psi	ASTM D1708
Elongation at Break	1.0 %	1.0 %	ASTM D638
	6.0 %	6.0 %	ASTM D1708
Tensile Modulus	9.72 GPa	1410 ksi	ASTM D1708
	14.5 GPa	2100 ksi	ASTM D638
Flexural Strength	89.6 MPa	13000 psi	ASTM D790
	@Temperature 232 °C	@Temperature 450 °F	
	152 MPa	22000 psi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric Pa	English	Comments
Flexural Modulus	@Temperature 232 °C	@Temperature 450 °F	ASTM D790
	14.5 GPa	2100 ksi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	138 MPa	20000 psi	ASTM D695
Compressive Modulus	8.55 GPa	1240 ksi	ASTM D695
Poissons Ratio	0.42	0.42	
Shear Modulus	3.42 - 5.11 GPa	496 - 741 ksi	Calculated
Izod Impact, Notched	0.430 J/cm	0.806 ft-lb/in	ASTM D256
	2.20 J/cm	4.12 ft-lb/in	ASTM D256
Coefficient of Friction, Dynamic	0.27	0.27	Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi); ASTM D3702
	0.29	0.29	Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi); ASTM D3702
K (wear) Factor	34.2 x 10 ⁻⁸ mm ³ /N-M	17.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi); ASTM D3702
	42.3 x 10 ⁻⁸ mm ³ /N-M	21.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi); ASTM D3702

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 µm/m-°C	7.78 µin/in-°F	ASTM D696
Thermal Conductivity	0.810 W/m-K	5.62 BTU-in/hr-ft ² -°F	ASTM C177
Deflection Temperature at 1.8 MPa (264 psi)	278 °C	532 °F	Unannealed; ASTM D648

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+7 ohm-cm	2.00e+7 ohm-cm	ASTM D257
Surface Resistance	6.00e+6 ohm	6.00e+6 ohm	ASTM D257

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 Processing Properties	177 °C Metric	351 °F English	Comments
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
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Flame Retardant	
	Good Chemical Resistance	
	Good Creep Resistance	
	Good Wear Resistance	
	High Heat Resistance	
	High Temperature Strength	
	Low Friction	
	Self Lubricating	
	Semi Conductive	
Forms	Pellets	
Generic	PAI	
Processing Method	Injection Molding	
	Machining	
	Profile Extrusion	
RoHS Compliance	RoHS Compliant	
Screw L/D Ratio	18.0:1.0 to 24.0:1.0	

Uses Descriptive Properties	Aerospace Applications Value	Comments
	Aircraft Applications	
	Automotive Applications	
	Bearings	
	Bushings	
	Cams	
	Gears	
	Industrial Applications	
	Industrial Parts	
	Machine/Mechanical Parts	
	Metal Replacement	
	Rollers	
	Sealing Devices	
	Seals	
	Thrust Washer	
	Transmission Applications	
	Washer	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China