

Solvay Specialty Polymers Torlon® 5030 Polyamide-imide (PAI) (Unverified Data**)

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

Material Notes:

Torlon 5030 is a 30% glass-fiber reinforced grade of polyamide-imide (PAI) resin. It offers high strength and modulus and exceptional creep resistance. It has thermal expansion characteristics similar to aluminum and therefore excellent dimensional stability. 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. The mechanical properties of Torlon 5030 resin make it a candidate for metal replacement in high temperature, high stress applications. In addition, it offers outstanding electrical properties, which makes it ideal for high performance parts such as connectors, switches and relays. - High Flow: Torlon 5030-HF - Low Flow: Torlon 5030-LF - Extrusion Grade: Torlon 5030-El
Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Torlon-5030-Polyamide-imide-PAI-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.61 g/cc	1.61 g/cc	ASTM D792
Filler Content	30 %	30 %	Glass Fiber Reinforcement
Water Absorption	0.24 % @Time 86400 sec	0.24 % @Time 24.0 hour	ASTM D570
Linear Mold Shrinkage, Flow	0.0010 - 0.0025 cm/cm	0.0010 - 0.0025 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength	221 MPa	32100 psi	ASTM D638
Tensile Stress	205 MPa	29700 psi	ASTM D1708
Elongation at Break	2.3 %	2.3 %	ASTM D638
	7.0 %	7.0 %	ASTM D1708
Tensile Modulus	10.8 GPa	1570 ksi	ASTM D1708
	14.5 GPa	2100 ksi	ASTM D638
Flexural Strength	181 MPa @Temperature 232 °C	26300 psi @Temperature 450 °F	ASTM D790
	333 MPa @Temperature 23.0 °C	48300 psi @Temperature 73.4 °F	ASTM D790
	9.86 GPa	1430 ksi	

Flexural Modulus Mechanical Properties	Metric @ Temperature 232 °C	English @ Temperature 450 °F	ASTM D790 Comments
	11.7 GPa	1700 ksi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	264 MPa	38300 psi	ASTM D695
Compressive Modulus	7.93 GPa	1150 ksi	ASTM D695
Izod Impact, Notched	0.800 J/cm	1.50 ft-lb/in	ASTM D256
	5.30 J/cm	9.93 ft-lb/in	ASTM D4812

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 µm/m-°C	8.89 µin/in-°F	ASTM D696
Thermal Conductivity	0.360 W/m-K	2.50 BTU-in/hr-ft²-°F	ASTM C177
Deflection Temperature at 1.8 MPa (264 psi)	282 °C	540 °F	Unannealed; ASTM D648

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+17 ohm-cm	2.00e+17 ohm-cm	ASTM D257
Surface Resistance	1.00e+18 ohm	1.00e+18 ohm	ASTM D257
Dielectric Constant	4.2	4.2	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	4.4	4.4	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	33.0 kV/mm	838 kV/in	ASTM D149
Dissipation Factor	0.022	0.022	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.050	0.050	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	304 °C	579 °F	
Nozzle Temperature	371 °C	700 °F	

Mold Temperature Processing Properties	199 - 216 °C Metric	390 - 421 °F English	Comments
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
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Flame Retardant	
	Good Chemical Resistance	
	Good Compressive Strength	
	Good Creep Resistance	
	Good Dimensional Stability	
	High Heat Resistance	
	High Stiffness	
	High Temperature Strength	
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	
	Business Equipment	
	Connectors	
	Electrical Housing	
	Electrical Parts	
	Electrical/Electronic Applications	
	Housings	
	Industrial Applications	
	Industrial Parts	
	Machine/Mechanical Parts	
	Metal Replacement	
	Oil/Gas Applications	
	Sealing Devices	
	Switches	
	Valves/Valve Parts	

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