Torlon® 5030

Polyamide-imide

Solvay Specialty Polymers

Message:

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-E

General Information	
Filler / Reinforcement	Glass Fiber,30% Filler by Weight
Features	Flame Retardant
	Good Chemical Resistance
	Good Compressive Strength
	Good Creep Resistance
	Good Dimensional Stability
	High Heat Resistance
	High Stiffness
	High Temperature Strength
Uses	Aerospace Applications
	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

RoHS Compliance	RoHS Compliant
Forms	Pellets
Processing Method	Injection Molding Machining Profile Extrusion
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1) Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.61	g/cm³	ASTM D792
Molding Shrinkage - Flow	0.10 to 0.25	%	ASTM D955
Water Absorption (24 hr)	0.24	%	ASTM D570
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	14500	MPa	ASTM D638
Tensile Strength	221	MPa	ASTM D638
Tensile Stress	205	MPa	ASTM D1708
Tensile Elongation			
Break [1]	7.0	%	ASTM D1708
Break	2.3	%	ASTM D638
Flexural Modulus			ASTM D790
23°C	11700	MPa	
232°C	9860	MPa	
Flexural Strength			ASTM D790
23°C	333	MPa	
232°C	181	MPa	
Compressive Modulus	7930	MPa	ASTM D695
Compressive Strength	264	MPa	ASTM D695
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	80	J/m	ASTM D256
Unnotched Izod Impact	530	J/m	ASTM D4812
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	282	°C	ASTM D648
Thermal Conductivity	0.36	W/m/K	ASTM C177
Coefficient of Linear Thermal Expansion	1.6E-5	cm/cm/°C	ASTM D696
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+18	ohms	ASTM D257
Volume Resistivity	2.0E+17	ohms·cm	ASTM D257
Dielectric Strength	33	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	4.40		

1 MHz	4.20	
Dissipation Factor		ASTM D150
60 Hz	0.022	
1 MHz	0.050	

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 to 216	°C
Back Pressure	6.89	MPa
Screw Speed	50 to 100	rpm
Screw L/D Ratio	18.0:1.0 to 24.0:1.0	

NOTE	
1.	ASTM Test Method D1708 has been used to measure the tensile properties of PAI and similar materials because the small test specimen conserved material.Today the most widely used specimen is the Type 1 bar of ASTM D638. These D1708 values are included for historical purposes and they should not be compared to the D638 values.

Recommended distributors for this material

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