

Solvay Specialty Polymers Torlon® 4200 Polyamide-imide (PAI)

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

Material Notes:

Torlon® 4200 is an unreinforced, unpigmented grade of polyamide-imide (PAI) resin for extrusion. This grade is designed for applications in the semiconductor industry which cannot tolerate particulates such as metals or inorganic particles migrating from the polymer.

Torlon® 4200 has the best impact resistance and greatest elongation of all the Torlon® grades. 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. Features: Ductile; Flame Retardant; Good Chemical Resistance; Good Creep Resistance; Good Electrical Properties; Good Wear Resistance; High Heat Resistance; High Temperature Strength; Ultra High Impact Resistance. Uses: Electrical/Electronic Applications; Machine/Mechanical Parts; Semiconductor Molding Compounds. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Torlon-4200-Polyamide-imide-PAI.php

Physical Properties	Metric	English	Comments
Density	1.42 g/cc	0.0513 lb/in ³	ASTM D792
Water Absorption	0.33 %	0.33 %	ISO 62
	@Time 86400 sec	@Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0060 - 0.0085 cm/cm	0.0060 - 0.0085 in/in	

Mechanical Properties	Metric	English	Comments
Tensile Strength	152 MPa	22000 psi	ASTM D638
Tensile Stress	192 MPa	27800 psi	ASTM D1708
Elongation at Break	15 %	15 %	ASTM D638
Tensile Modulus	4.48 GPa	650 ksi	Type I; ASTM D638
Flexural Strength	118 MPa	17100 psi	ASTM D790
	@Temperature 232 °C	@Temperature 450 °F	
Flexural Modulus	241 MPa	35000 psi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	3.59 GPa	521 ksi	ASTM D790
	@Temperature 232 °C	@Temperature 450 °F	
Flexural Modulus	5.03 GPa	730 ksi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Compressive Strength Mechanical Properties	221 MPa Metric	32100 psi English	ASTM D695 Comments
Compressive Modulus	4.00 GPa	580 ksi	ASTM D695
Poissons Ratio	0.45	0.45	ASTM E132
Izod Impact, Notched	1.40 J/cm	2.62 ft-lb/in	ASTM D256
Izod Impact, Unnotched	11.0 J/cm	20.6 ft-lb/in	ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	31.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	17.2 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.260 W/m-K	1.80 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ASTM C177
Deflection Temperature at 1.8 MPa (264 psi)	278 $\text{Å}^\circ\text{C}$	532 $\text{Å}^\circ\text{F}$	Unannealed; ASTM D648

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+17 ohm-cm	2.00e+17 ohm-cm	ASTM D257
Surface Resistance	5.00e+18 ohm	5.00e+18 ohm	ASTM D257
Dielectric Constant	3.9	3.9	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	4.2	4.2	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dissipation Factor	0.026	0.026	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	23.0 kV/mm	584 kV/in	ASTM D149
Dissipation Factor	0.031	0.031	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	304 $\text{Å}^\circ\text{C}$	579 $\text{Å}^\circ\text{F}$	
Nozzle Temperature	371 $\text{Å}^\circ\text{C}$	700 $\text{Å}^\circ\text{F}$	
Mold Temperature	199 - 216 $\text{Å}^\circ\text{C}$	390 - 421 $\text{Å}^\circ\text{F}$	
Drying Temperature	177 $\text{Å}^\circ\text{C}$	351 $\text{Å}^\circ\text{F}$	

Processing Properties	@Time 10800 sec Metric	@Time 3.00 hour English	Comments
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	
	Latin America	
	North America	
Form	Pellets	
Processing Technique	Injection Molding; Machining; Profile Extrusion	
Screw L/D Ratio	18.0:1.0 to 24.0:1.0	

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