Torlon® 4200
polyamide-imide

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.

- High Flow: Torlon® 420O EXT

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Chemical Resistant • Creep Resistant • Ductile • Flame Retardant • Good Electrical Properties	• High Heat Resistance • High Temperature Strength • Ultra High Impact Resistance • Wear Resistant
Uses	• Electrical/Electronic Applications • Machine/Mechanical Parts	• Semiconductor Molding Compounds
RoHS Compliance	• Contact Manufacturer	
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.42		ASTM D792
Molding Shrinkage - Flow	0.60 to 0.85	%	ASTM D955
Water Absorption (24 hr)	0.33	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [1]	4480	MPa	ASTM D638
--	4900	MPa	ASTM D1708
Tensile Strength [1]	152	MPa	ASTM D638
Tensile Stress	192	MPa	ASTM D1708
Tensile Elongation			
Break [1]	7.6	%	ASTM D638
Break	15	%	ASTM D1708
Flexural Modulus			ASTM D790
23°C	5030	MPa	
232°C	3590	MPa	

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Mechanical	Typical Value	Unit	Test method
Flexural Strength			ASTM D790
23°C	241	MPa	
232°C	118	MPa	
Compressive Modulus	4000	MPa	ASTM D695
Compressive Strength	221	MPa	ASTM D695
Poisson's Ratio	0.45		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact	140	J/m	ASTM D256
Unnotched Izod Impact	1100	J/m	ASTM D4812

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	278	°C	
CLTE - Flow	3.1E-5	cm/cm/°C	ASTM E831
Thermal Conductivity	0.26	W/m/K	ASTM C177

Electrical	Typical Value	Unit	Test method
Surface Resistivity	5.0E+18	ohms	ASTM D257
Volume Resistivity	2.0E+17	ohms·cm	ASTM D257
Dielectric Strength	23	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	4.20		
1 MHz	3.90		
Dissipation Factor			ASTM D150
60 Hz	0.026		
1 MHz	0.031		

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Injection	Typical 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	

Notes

Typical properties: these are not to be construed as specifications.

[1] Type I

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