

Torlon® 4203

polyamide-imide

Torlon 4203 is an unreinforced, lubricated, pigmented grade of polyamide-imide (PAI) resin for extrusion. It 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.

Torlon 4203 offers outstanding electrical properties, which makes it ideal for high performance parts such as connectors,

switches and relays. In addition Torlon 4203 polyamide-imide can be used in applications such as thrust washers, spline liners, valve seats, bushings, bearings, wear rings, cams and other applications requiring strength at high temperature and resistance to wear.

- High Flow: Torlon 4203 EXT
- Higher Flow: Torlon 4203 HQ
- Highest Flow: Torlon 4203 HHQ

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • North America	• South America
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
RoHS Compliance	• RoHS Compliant		
Forms	• Pellets		
Processing Method	• Injection Molding	• Machining	• Profile Extrusion

Physical

	Typical Value	Unit	Test Method
Specific Gravity	1.42	g/cm ³	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			
--	4900	MPa	ASTM D1708
-- ¹	4480	MPa	ASTM D638
Tensile Strength ¹	152	MPa	ASTM D638
Tensile Stress	192	MPa	ASTM D1708
Tensile Elongation			
Break	15	%	ASTM D1708
Break ¹	7.6	%	ASTM D638
Flexural Modulus			ASTM D790
23°C	5030	MPa	
232°C	3590	MPa	
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 1.8 MPa, Unannealed	278	°C	ASTM D648
Thermal Conductivity	0.26	W/m/K	ASTM C177
Coefficient of Linear Thermal Expansion	0.000031	cm/cm/°C	ASTM D696
Electrical	Typical Value	Unit	Test Method
Surface Resistivity	5.0E+18	ohm	ASTM D257
Volume Resistivity	2.0E+17	ohm-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		
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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