



MANUFACTURING CORPORATION

- Plastics Machining
- Spring Energized Seals
- Rotary Lip Seals

**Material Data Sheet**

Material: Torlon® 4203 PAI

Polyamide-Imide

Torlon® 4203 polyamide-imide offers excellent compressive strength and the highest elongation of the Torlon grades. It also provides electrical insulation and exceptional impact strength. This grade is commonly used for electrical connectors and insulators due to its high dielectric strength. Its ability to carry high loads over a broad temperature range makes it good for structural components such as linkages and seal rings. Torlon 4203 is also an excellent choice for wear applications involving impact loading and abrasive wear.

Mechanical Properties	Test Method ASTM	Value	Units
Specific Gravity, 73°F	D792	1.41	
Tensile Strength, 73°F	D638	20,000	psi
Tensile Modulus of Elasticity, °F	D638	600,000	psi
Tensile Elongation ( at break), 73°F	D638	10	%
Flexural Strength, 73°F	D790	24,000	psi
Flexural Modulus of Elasticity, 73°F	D790	600,000	psi
Shear Strength, 73°F	D732	16,000	psi
Compressive Strength, 10% Deformation, 73°F	D695	24,000	psi
Compressive Modulus of Elasticity, 73°F	D695	478,000	psi
Hardness, Rockwell, Scale as noted, 73°F	D785	E80 (M120)	
Hardness, Durometer, Shore "D" Scale, 73°F	D2240		
Izod Impact (notched), 73°F	D256 Type A	2	ft-lb/in of notch
Coefficient of Friction (Dry vs. Steel) Dynamic	QTM 55007	0.35	
Limiting PV (with 4:1 safety factor applied)	QTM 55007	12,500	ft.lbs./in. <sup>2</sup> min
Wear Factor "k" x 10 <sup>-10</sup>	QTM 55010	50	in. <sup>3</sup> -min/ft.lbs.hr
<b>Thermal Properties</b>			
Coefficient of Linear Thermal Expansion (-40°F to 300°F)	E-831 (TMA)	1.7 x 10 <sup>-5</sup>	in/in./°F
Heat Deflection Temperature 264 psi	D648	532	°F
TG-Glass transition (amorphous)	D3418	527	°F
Melting Point (Crystalline) peak	D3418	N/A	°F
Continuous Service Temperature in Air (Max.) (1)		500	°F
Thermal Conductivity	F433	1.8	BTU-in/hr-ft <sup>2</sup> -°F
<b>Electrical Properties</b>			
Dielectric Strength, Short Term	D149	580	Volts/mil
Surface Resistivity	EOS/ESD S11.11	>10 <sup>16</sup>	ohm/square
Dielectric Constant, 106 Hz	D150	4.2	
Dissipation Factor, 106 Hz	D150	0.026	
Flammability @ 3.1 mm (1/8 in.)	UL 94	V-0	
FDA Compliant		No	

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\*The values shown in these and the following charts are typical, average properties. Actual values may differ due to variations in resin formulations and processing methods. These values are obtained from sources believed to be reliable, including the resin manufactures, converters and other published sources. However, they should not be used for specification or design purposes. Above information is provided by Quadrant EPP.