Torlon® 4203L

polyamide-imide

Torlon 4203L is an unreinforced, lubricated, pigmented grade of polyamide-imide (PAI) resin. 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 4203L resin offers outstanding electrical properties, which makes it ideal for high performance parts such as connectors, switches and relays. In addition Torlon 4203L 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 4203L-HF
- Low Flow: Torlon 4203L-LF

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • North America	• South America
Additive	• PTFE Lubricant		
Features	• Ductile • Fatigue Resistant • Flame Retardant • Good Chemical Resistance	• Good Creep Resistance • Good Electrical Properties • Good Wear Resistance • High Heat Resistance	• High Temperature Strength • Low Temperature Toughness • Ultra High Impact Resistance
Uses	• Aircraft Applications • Automotive Applications • Bushings • Connectors	• Electrical Parts • Electrical/Electronic Applications • Fasteners • Film	• Machine/Mechanical Parts • Oil/Gas Applications • Semiconductor Molding Compounds • Thrust Washer
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• ASTM D4000 PAI000 R03 A56316 GA140 Z1Z2Z3Z4Z5Z6, Dwg YC3P-7E195-AA • CHRYSLER MS-DB405 CPN3373 Color: Natural		
Forms	• Pellets		
Processing Method	• Injection Molding	• Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test Method
Specific Gravity	1.42	g/cm³	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

Mechanical	Typical Value	Unit	Test Method
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			ASTM D648
1.8 MPa, Unannealed	278	°C	
CLTE - Flow	0.000031	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	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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Contact Solvay Specialty Polymers

Europe, Middle East and Africa **SpecialtyPolymers.EMEA@solvay.com**
Americas **SpecialtyPolymers.Americas@solvay.com**
Asia and Australia **SpecialtyPolymers.Asia@solvay.com**

For assistance with an emergency involving this product, such as spill, leak, fire or explosion, call day or night:

Emergency Health Information

USA +1.800.621.4590
International +1.770.772.8577

Emergency Spill Information

USA +1.800.424.9300
+1.703.527.3887 (CHEMTREC)
Europe +44.208.762.8322 (CARECHEM)
China +86.10.5100.3039
All other Asian countries +65.633.44.177

For additional product information, technical assistance and Material Safety Data Sheets (MSDS), call:

USA + 1.800.621.4557 / +1.770.772.8760
Europe +49.211.5135.9000
Japan +81.3.5425.4300
China & Southeast Asia +86.21.5080.5080

Material Safety Data Sheets (MSDS) for products of Solvay Specialty Polymers are available upon request from your sales representative or by emailing us at specialtypolymers@solvay.com. Always consult the appropriate MSDS before using any of our products.

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