



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	• 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/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			
--	192	MPa	ASTM D1708
-- ¹	152	MPa	ASTM D638
Tensile Elongation			
Break	15	%	ASTM D1708

Mechanical	Typical Value	Unit	Test Method
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

For assistance with an emergency involving products of Solvay Advanced Polymers, such as a 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

World Headquarters

Solvay Advanced Polymers, L.L.C.

4500 McGinnis Ferry Road

Alpharetta, GA 30005 USA

+1.800.621.4557 (U.S.A.)

+1.770.772.8760

SOLVAY
Advanced Polymers



MORE PLASTICS WITH MORE PERFORMANCE™

Solvay Advanced Polymers has many locations around the world. Please visit our website for the office nearest you, or email advancedpolymers@solvay.com for assistance. www.solvayadvancedpolymers.com

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

Property values for individual batches will vary within specification limits. Unless otherwise noted, values shown are typical for uncolored resin; colorants may alter values. For Preliminary Data Sheets, values are typical of limited production and specifications are not yet established.

To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither Solvay Advanced Polymers, LLC nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this information or its use. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for implantable medical devices; Solvay Advanced Polymers does not allow or support the use of any other products in any implant applications. This information is for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. The use of this product resides on the determination of the customer not Solvay Advanced Polymers. The customer must determine suitability of any information or material for any contemplated use, the manner of use and whether any patents are infringed. This information gives typical properties only and is not to be used for specification purposes. Solvay Advanced Polymers reserves the right to make additions, deletions, or modifications to the information at any time without prior notification.

All trademarks and registered trademarks are the property of Solvay Advanced Polymers, LLC, an affiliate of Solvay SA.

© 2010 Solvay Advanced Polymers, LLC. All rights reserved.