

# Torlon® 4203L

Polyamide-imide

Solvay Specialty Polymers

PROSPECTOR®

www.ulprospector.com

## Technical Data

### Product Description

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		
Literature <sup>1</sup>	• <a href="#">Processing - Design Guide (English)</a> • <a href="#">Processing - Injection (English)</a> • <a href="#">Technical Datasheet</a>		
Search for UL Yellow Card	• <a href="#">Solvay Specialty Polymers</a> • <a href="#">Torlon®</a>		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North 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		
Forms	• Pellets		
Processing Method	• Injection Molding	• Machining	• Profile Extrusion
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1)	• Viscosity vs. Shear Rate (ISO 11403-2)	

Physical	Nominal Value Unit	Test Method
Specific Gravity	1.42 g/cm <sup>3</sup>	ASTM D792
Molding Shrinkage - Flow	0.60 to 0.85 %	ASTM D955
Water Absorption (24 hr)	0.33 %	ASTM D570

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus		
--	4900 MPa	ASTM D1708
-- <sup>3</sup>	4480 MPa	ASTM D638
Tensile Strength <sup>3</sup>	152 MPa	ASTM D638
Tensile Stress	192 MPa	ASTM D1708
Tensile Elongation		
Break	15 %	ASTM D1708
Break <sup>3</sup>	7.6 %	ASTM D638
Flexural Modulus		ASTM D790
23°C	5030 MPa	
232°C	3590 MPa	



Mechanical	Nominal 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	Nominal Value Unit	Test Method
Notched Izod Impact	140 J/m	ASTM D256
Unnotched Izod Impact	1100 J/m	ASTM D4812
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load		ASTM D648
1.8 MPa, Unannealed	278 °C	
Glass Transition Temperature <sup>4</sup>	277 °C	DSC
CLTE - Flow	3.1E-5 cm/cm/°C	ASTM E831
Thermal Conductivity	0.26 W/m/K	ASTM C177
Electrical	Nominal 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	
Injection	Nominal 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

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

<sup>2</sup> Typical properties: these are not to be construed as specifications.

<sup>3</sup> Type I

<sup>4</sup> Tg, onset, Solvay method, 2nd heat. Method is equivalent to ISO 11357-2.



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### Where to Buy

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#### Supplier

##### Solvay Specialty Polymers

Alpharetta, GA USA

Telephone: 800-621-4557

Web: <http://www.solvayspecialtypolymers.com/>

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#### Distributor

Please contact the supplier to find a distributor for Torlon® 4203L

