Torlon® 4203L

Polyamide-imide

Solvay Specialty Polymers

Message:

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 Information	
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/cm³	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
-- [1]	4480	MPa	ASTM D638
Tensile Strength [2]	152	MPa	ASTM D638
Tensile Stress	192	MPa	ASTM D1708
Tensile Elongation			
Break	15	%	ASTM D1708
Break [3]	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	**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 (1.8 MPa, Unannealed)	278	°C	ASTM D648
Glass Transition Temperature [4]	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	

NOTE	
1.	Type I
2.	Type I
3.	Type I
4.	Tg, onset, Solvay method, 2nd heat. Method is equivalent to ISO 11357-2.

Recommended distributors for this material

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