

Torlon[®] 4301 polyamide-imide

Torlon® 4301 is a wear-resistant grade of polyamide-imide (PAI) resin. It has a good balance of mechanical properties and wear resistance. It offers high flexural and compressive strength with a low coefficient of friction and outstanding wear resistance at both high velocity and high pressure conditions.

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.

Potential applications for Torlon® 4301 polyamideimide include thrust washers, spline liners, valve seats, bushings, bearings, wear rings, cams and other applications requiring strength at high temperature and resistance to wear.

Injection Molding Grades:

- High Flow: Torlon® 4301 HF
- Low Flow: Torlon® 4301 LF
- Low Flow Small Pellets: Torlon® 4301 LFSP

Extrustion Grades:

- High Flow: Torlon® 4301-EXT
- Higher Flow: Torlon® 4301-HQ

General		
Material Status	 Commercial: Active 	
Availability	 Africa & Middle East Asia Pacific Europe 	 Latin America North America
Additive	 PTFE + Graphite Lubricant 	
Features	 Chemical Resistant Creep Resistant Flame Retardant High Heat Resistance High Temperature Strength 	 Low Friction Self Lubricating Semi Conductive Wear Resistant
Uses	 Aerospace Applications Aircraft Applications Automotive Applications Bearings Bushings Cams Gears Industrial Applications Industrial Parts 	 Machine/Mechanical Parts Metal Replacement Oil/Gas Applications Rollers Sealing Devices Seals Thrust Washer Transmission Applications Washer
RoHS Compliance	RoHS Compliant	
Automotive Specifications	• BOSCH N28 BN05-OX2 N28 BN05-OX2, BN0512-CDSX-0Cgr01SO1	
Forms	Pellets	
Processing Method	Injection MoldingMachining	Profile Extrusion

Molding Shrinkage - Flow 0.35 to 0.60 % ASTM D955 Water Absorption (24 hr) 0.28 % ASTM D570 Mechanical Typical Value Unit Test method Tensile Modulus 6830 MPa ASTM D638 6830 MPa ASTM D638 6830 MPa ASTM D638 6650 MPa ASTM D638 6650 MPa ASTM D638 6650 MPa ASTM D708 Tensile Etorgation Break 3.3 % ASTM D709 Tensile Etorgation Break 3.3 % ASTM D709 23°C 6890 MPa 23°C 215 MPa 23°C 112 MPa Compressive Modulus 5310 MPa ASTM D695 Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Compressive Modulus 0.31 4 4	Physical	Typical Value	Unit	Test method
Water Absorption (24 hr) 0.28 % ASTM D570 Mechanical Typical Value Unit Test method Tensile Modulus	Density / Specific Gravity	1.46		ASTM D792
Mechanical Typical Value Unit Test method Tensile Modulus 6830 MPa ASTM D638 2 6550 MPa ASTM D638 Ensile Strength 113 MPa ASTM D638 Tensile Strength 113 MPa ASTM D708 Tensile Elongation Break 3.3 % ASTM D638 Break 3.3 % ASTM D790 23°C 6890 MPa 23°C 6890 MPa 23°C 23°C 6890 MPa 23°C 215 MPa ASTM D790 23°C 215 MPa 23°C 215 MPa 23°C 215 MPa 23°C Compressive Modulus 5310 MPa ASTM D790 23°C 215 MPa 23°C 215 MPa 337 MPa ASTM D695 Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction 4 0.31 5 0.38 7 0.030 5 0.38 7 0.030 7 0.030 7 0.030 7 0.030 7 0.030 7 0.030	Molding Shrinkage - Flow	0.35 to 0.60	%	ASTM D955
Tensile Modulus	Water Absorption (24 hr)	0.28	%	ASTM D570
6830 MPa ASTM D638 2 6550 MPa ASTM D1708 Tensile Strength 113 MPa ASTM D1708 Tensile Stress ³ 163 MPa ASTM D1708 Tensile Elongation Break 3.3 % ASTM D1708 Break 3.3 % ASTM D1708 Break ² 7.0 % ASTM D1708 Elexural Modulus ASTM D790 23°C 6890 MPa 23°C 6890 MPa ASTM D790 23°C 215 MPa 23°C 23°C 215 MPa 331 MD790 23°C 12 MPa ASTM D695 Compressive Modulus Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D702 31 5 5 0.39 5 10.18 7 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) <td< td=""><td>Mechanical</td><td>Typical Value</td><td>Unit</td><td>Test method</td></td<>	Mechanical	Typical Value	Unit	Test method
2 6550 MPa ASTM D1708 Tensile Strength 113 MPa ASTM D638 Tensile Elongation Ensile Elongation Ensile Elongation Break 3.3 % ASTM D1708 Plexural Modulus 3.3 % ASTM D1708 23°C 6890 MPa ASTM D790 23°C 23°C 6890 MPa 23°C 215 MPa ASTM D790 23°C 215 MPa 23°C 23°C 215 MPa ASTM D790 23°C 215 MPa 23°C 23°C 215 MPa ASTM D790 23°C 215 MPa 23°C 23°C 215 MPa ASTM D790 23°C 215 MPa ASTM D790 23°C 10 ASTM D790 23°C 120 MPa ASTM D790 Compressive Modulus 5310 MPa ASTM D790 Compressive Strength 166 MPa ASTM D790 Coefficient of Friction ASTM D3702 ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 ftHohr	Tensile Modulus			
Correction Correction Correction Tensile Strength 113 MPa ASTM D638 Tensile Elongation 33 % ASTM D638 Break 3.3 % ASTM D638 Break 7.0 % ASTM D790 23°C 6890 MPa Compressive Strength ASTM D790 ASTM D635 Compressive Strength 166 MPa ASTM D636 Compressive Strength 166 MPa ASTM D63702 4 0.31 5 0.39 6 7 0.030 MPa STM D3702 Thrinh~10/ Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 fith/hr Thrinh~10/ Dry: 0.25 m/s, 6.9 MPa (75 fpm		6830	MPa	ASTM D638
Tensile Stress ³ 163 MPa ASTM D1708 Tensile Elongation Break 3.3 % ASTM D638 Break ² 7.0 % ASTM D1708 Flexural Modulus ASTM D790 23°C 6890 MPa 23°C 6890 MPa 23°C 6890 MPa 23°C 215 MPa ASTM D790 23°C 215 MPa 23°C 215 MPa ASTM D695 Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D695	²	6550	MPa	ASTM D1708
Tensile Elongation Break 3.3 % ASTM D638 Break 2 7.0 % ASTM D708 Elevaral Modulus ASTM D790 23°C 6890 MPa 23°C 6890 MPa ASTM D790 23°C 6890 MPa ASTM D790 23°C 29°C 4960 MPa Strong Pressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D695 ASTM D3702 4 0.31 5 0.39 5 0.39 6 0.18 7 0.030 In*minA-10/ ftlibrin Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in*minA-10/ ftlibrin Dry: 0.25 m/s, 3.4 MPa (800 fpm, 31.25 psi) 17.0 in*minA-10/ ftlibrin Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in*minA-10/ ftlibrin Iubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in*minA-10/ ftlibrin Iubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in*minA-10/ ftlibrin Iubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi)	Tensile Strength	113	MPa	ASTM D638
Break 3.3 % ASTM D638 Break 2 7.0 % ASTM D709 Flexural Modulus ASTM D790 23°C 232°C 4960 MPa ASTM D790 23°C 4960 MPa ASTM D790 23°C 4960 MPa ASTM D790 23°C 112 MPa Compressive Modulus S310 MPa ASTM D695 Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D3702 4 0.31 5 0.39 6 0.18 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³-min^-10/ftlb-hr Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 17.0 itlb-hr Itlb-hr Itlb-hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in³-min^-10/ftlb-hr Itlb-hr Itlb-hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³-min^-10/ftlb-hr Itlb-hr Lubr	Tensile Stress ³	163	MPa	ASTM D1708
Break ² 7.0 % ASTM D1708 Flexural Modulus ASTM D790 23°C 6890 MPa 232°C 4960 MPa ASTM D790 23°C 215 MPa ASTM D790 23°C 112 MPa ASTM D790 Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D3702 4 0.31 5 0.39 5 0.39 7 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in*min^-10/ ft:lb-hr Itb-hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in*min^-10/ ft:lb-hr Itb-hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in*min^-10/ ft:lb-hr Itb-hr <td< td=""><td>Tensile Elongation</td><td></td><td></td><td></td></td<>	Tensile Elongation			
Flexural Modulus ASTM D790 23°C 6890 MPa 23°C 4960 MPa 23°C 4960 MPa Flexural Strength ASTM D790 23°C 215 MPa 23°C 112 MPa Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D3702 4 4 0.31 5 0.39 6 0.18 7 0.030 Wear Factor ASTM D3702 ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 fin*minA~10/ Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 17.0 fit/bhr Dry: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 fin*minA~10/ psi) 1.0 in*minA~10/ ft/bhr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 fin*minA~10/ psi) Unit Cett method Notched Izod Impact 44 J/m Notched Izod Impact 44 J/m ASTM D256 Unnotched Izod Imp	Break	3.3	%	ASTM D638
23°C 6890 MPa 232°C 4960 MPa Flexural Strength ASTM D790 23°C 215 MPa Compressive Modulus 5310 MPa Compressive Strength 166 MPa Compressive Strength 166 MPa ASTM D695 Compressive Strength 0.31	Break ²	7.0	%	ASTM D1708
232°C 4960 MPa Flexural Strength ASTM D790 23°C 215 MPa 232°C 112 MPa Compressive Modulus 5310 MPa Compressive Strength 166 MPa Coefficient of Friction ASTM D695 4 0.31 5 0.39 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 Dry: 0.25 m/s, 5.2 MPa (800 fpm, 31.25 psi) 17.0 Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 psi) 0.400 Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 Motched Izod Impact 64 J/m Motched Izod Impact 64 J/m Motched Izod Impact 64 J/m Deflection Temperature Under Load ASTM D648 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K ASTM C177	Flexural Modulus			ASTM D790
Flexural Strength ASTM D790 23°C 215 MPa 232°C 112 MPa Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D3702 4 4 0.31	23°C	6890	MPa	
23°C 215 MPa 232°C 112 MPa Compressive Modulus 5310 MPa Compressive Strength 166 MPa ASTM D695 Compressive Strength 166 MPa 4 0.31 5 0.39 6 0.18 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³ min^-10/ Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 17.0 in³ min^-10/ Dry: 0.25 m/s, 3.4 MPa (800 fpm, 31.25 psi) 17.0 in³ min^-10/ Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in³ min^-10/ tilb-hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³ min^-10/ tubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³ min^-10/ tubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³ min^-10/ tubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³ min^-10/ tubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³ min^-10/ tubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³ min^-10/ tubricated:	232°C	4960	MPa	
232°C 112 MPa Compressive Modulus 5310 MPa ASTM D695 Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D3702 4 0.31 5 0.39 6 0.18 7 0.030 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in®min^-10/ ft/lb-hr Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in®min^-10/ ft/lb-hr Insecccccccccccccccccccccccccccccccccccc	Flexural Strength			ASTM D790
Compressive Modulus5310MPaASTM D695Compressive Strength166MPaASTM D695Coefficient of FrictionASTM D370240.3150.3960.1870.030Wear FactorASTM D3702Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi)14.0In*minA-10/ ft:lb-hrDry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi)17.0Iubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi)9.00Iubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi)0.400ImpactTypical ValueInpactTypical ValueNotched Izod Impact64J/mASTM D256Unnotched Izod Impact410J/mASTM D4812ThermalTypical ValueDeflection Temperature Under LoadASTM D6481.8 MPa, Unannealed279 °CThermal Conductivity0.53W/m/KASTM C177	23°C	215	MPa	
Compressive Strength 166 MPa ASTM D695 Coefficient of Friction ASTM D3702 4 0.31 5 0.39 6 0.18 7 0.030 0 0 Wear Factor ASTM D3702 ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in*min^-10/ ft·lb·hr ASTM D3702 Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 in*min^-10/ ft·lb·hr inb·mr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in*min^-10/ ft·lb·hr inb·mr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in*min^-10/ ft·lb·hr Inb·hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 ASTM D648 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K ASTM C177	232°C	112	MPa	
Coefficient of Friction ASTM D3702 4 0.31 5 0.39 6 0.18 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³-minA-10/ ft:Ib-hr Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 17.0 in³-minA-10/ ft:Ib-hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi) 9.00 in³-minA-10/ ft:Ib-hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³-minA-10/ ft:Ib-hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D6488 ASTM D6488 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K	Compressive Modulus	5310	MPa	ASTM D695
4 0.31 5 0.39 6 0.18 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³·min^-10/ ft·lb-hr Dry: 0.25 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 in³·min^-10/ ft·lb-hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi) 9.00 in³·min^-10/ ft·lb-hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³·min^-10/ ft·lb-hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 ASTM D648 1.8 MPa, Unannealed 279 °C C Thermal Conductivity 0.53 W/m/K ASTM C177	Compressive Strength	166	MPa	ASTM D695
5 0.39 6 0.18 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³·minA-10/ ft·lb·hr Dry: 0.25 m/s, 6.9 MPa (50 fpm, 500 psi) 17.0 in³·minA-10/ ft·lb·hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in³·minA-10/ ft·lb·hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³·minA-10/ ft·lb·hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 1.8 MPa, Unannealed 1.8 MPa, Unannealed 279 °C C Thermal Conductivity 0.53 W/m/K ASTM C177	Coefficient of Friction			ASTM D3702
6 0.18 7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³min^-10/ft·lb·hr Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 in³min^-10/ft·lb·hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in³min^-10/ft·lb·hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³-min^-10/ft·lb·hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 1.8 MPa, Unannealed 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/k	4	0.31		
7 0.030 Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in³·min^-10/ Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 in³·min^-10/ Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in³·min^-10/ psi) 0.400 in³·min^-10/ Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in³·min^-10/ Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K ASTM C177	5	0.39		
Wear Factor ASTM D3702 Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 ft·lb·hr Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 ft·lb·hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi) 9.00 ft·lb·hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 ft·lb·hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method ASTM D4812 ASTM D4812 ASTM D4812 Thermal Typical Value Unit Test method 18 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K	6	0.18		
Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi) 14.0 in ³ ·min^-10/ Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 in ³ ·min^-10/ Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 9.00 in ³ ·min^-10/ psi) 9.00 in ³ ·min^-10/ Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 in ³ ·min^-10/ Mpact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load 279 °C C Thermal Conductivity 0.53 W/m/K ASTM C177	7	0.030		
Dry: 0.25 m/s, 3.4 MPd (50 rpm, 300 psi) 14.0 ft:lb-hr Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 ft:lb-hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi) 9.00 ft:lb-hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 ft:lb-hr Impact Typical Value Unit Impact Typical Value Unit Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m Thermal Typical Value Unit Test method ASTM D4812 Thermal 279 °C Thermal Conductivity 0.53 W/m/K	Wear Factor			ASTM D3702
Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi) 17.0 ft·lb·hr Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi) 9.00 ft·lb·hr Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi) 0.400 ft·lb·hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K ASTM C177	Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi)	14.0		
psi)9.00ft·lb·hrLubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi)0.400in³·min^-10/ ft·lb·hrImpactTypical ValueUnitTest methodNotched Izod Impact64J/mASTM D256Unnotched Izod Impact410J/mASTM D4812ThermalTypical ValueUnitTest methodDeflection Temperature Under Load279°C1.8 MPa, Unannealed279°CThermal Conductivity0.53W/m/KASTM C177	Dry: 4 m/s, 0.2 MPa (800 fpm, 31.25 psi)	17.0		
Lubricated: 4 m/s, 5.2 MPd (800 fpm, 750 psi) 0.400 ft·lb·hr Impact Typical Value Unit Test method Notched Izod Impact 64 J/m ASTM D256 Unnotched Izod Impact 410 J/m ASTM D4812 Thermal Typical Value Unit Test method Deflection Temperature Under Load ASTM D648 1.8 MPa, Unannealed 279 °C Thermal Conductivity 0.53 W/m/K ASTM C177		9.00		
Notched Izod Impact64 J/mASTM D256Unnotched Izod Impact410 J/mASTM D4812ThermalTypical Value UnitTest methodDeflection Temperature Under LoadASTM D6481.8 MPa, Unannealed279 °CThermal Conductivity0.53 W/m/K	Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi)	0.400		
Notched Izod Impact64 J/mASTM D256Unnotched Izod Impact410 J/mASTM D4812ThermalTypical Value UnitTest methodDeflection Temperature Under LoadASTM D6481.8 MPa, Unannealed279 °CThermal Conductivity0.53 W/m/KASTM C177	Impact	Typical Value	Unit	Test method
Unnotched Izod Impact410 J/mASTM D4812ThermalTypical Value UnitTest methodDeflection Temperature Under LoadASTM D6481.8 MPa, Unannealed279 °CThermal Conductivity0.53 W/m/K				ASTM D256
Deflection Temperature Under LoadASTM D6481.8 MPa, Unannealed279 °CThermal Conductivity0.53 W/m/KASTM C177		410	J/m	ASTM D4812
1.8 MPa, Unannealed279 °CThermal Conductivity0.53 W/m/KASTM C177	Thermal	Typical Value	Unit	Test method
Thermal Conductivity0.53 W/m/KASTM C177	Deflection Temperature Under Load			ASTM D648
	1.8 MPa, Unannealed	279	°C	
Coefficient of Linear Thermal Expansion 2.5E-5 cm/cm/°C ASTM D696	Thermal Conductivity	0.53	W/m/K	ASTM C177
	Coefficient of Linear Thermal Expansion	2.5E-5	cm/cm/°C	ASTM D696

Electrical	Typical Value Unit	Test method
Surface Resistivity	8.0E+17 ohms	ASTM D257
Volume Resistivity	8.0E+15 ohms∙cm	ASTM D257
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	

Injection Notes

Minimum drying conditions: 3 hours at 350°F (177°C), 4 hours at 300°F (149°C), or 16 hours at 250°F (121°C). Compression Ratio: 1:1 to 1.5:1

Begin hold pressure at a high setting 6,000–8,000 psi (41.37–55.16 MPa), for several seconds, then drop off to 3,000–5,000 psi (20.69–34.48 MPa), for the duration of the hold pressure sequence.

Molded parts must be post cured.

Notes

Typical properties: these are not to be construed as specifications.

¹ Material should be Tempered (Cured).

² ASTM Test Method D1708 has been used to measure the tensile properties of PAI and similar materials because the small test specimen conserved material.

Today the most widely used specimen is the Type 1 bar of ASTM D638. These D1708 values are included for historical purposes and they should not be compared to the D638 values.

³ ASTM Test Method D1708 has been used to measure the tensile properties of PAI and similar materials because the small test specimen conserved material. Today the most widely used specimen is the Type 1 bar of ASTM D638. These D1708 values are included for historical purposes and they should not be compared to the D638 values.

⁴ Dry: 0.25 m/s, 3.4 MPa (50 fpm, 500 psi)

⁵ Dry: 4 m/s, 0.2 MPa, (800 fpm, 31.25 psi)

⁶ Lubricated: 0.25 m/s, 6.9 MPa (75 fpm, 1000 psi)

⁷ Lubricated: 4 m/s, 5.2 MPa (800 fpm, 750 psi)

www.syensqo.com

Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

Neither Syensqo 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 product, related information or its use. Some applications of which Syensqo's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Syensqo's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infinged. The information and the products are 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.

All trademarks and registered trademarks are property of the companies that comprise the Syensqo or their respective owners.

© 2024 2023 Syensqo. All rights reserved.

