



# LEHIGH VALLEY PLASTICS

We Shape The Industry

## Torlon® 4203 PAI, Polyamide-imide, extruded (electrical grade)

MECHANICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Specific Gravity	1.41	ASTM D792	1.41
Tensile Strength, psi	20000	ASTM D638	138 MPa
Tensile Modulus, psi	600000	ASTM D638	4,137 MPa
Elongation, %	10	ASTM D638	10 %
Flexural Strength, psi	24000	ASTM D790	165 MPa
Flexural Modulus, psi	600000	ASTM D790	4,137 MPa
Shear Strength, psi	16000	ASTM D732	110 MPa
Compressive Strength, psi	2400	ASTM D695, 10% Def.	17 MPa
Compressive Modulus, psi	478000	ASTM D695	3,296 MPa
Hardness, Rockwell E	80	ASTM D785	80
Hardness, Rockwell M	120	ASTM D785	120
Izod Impact (Notched), ft-lb/in	2	ASTM D256 Type A	107 J/m
Coefficient of Friction, Dynamic	0.35	Dry vs. Steel, QTM55007	0.35
Limiting PV, psi-fpm	12500	4:1 safety factor; QTM 55007	0.44 MPa-m/sec
k (wear) factor, 10 <sup>-10</sup> in <sup>3</sup> -min/lb-ft-hr	50	QTM 55010	50 10 <sup>-10</sup> in <sup>3</sup> -min/lb-ft-hr
Relative Machinability	5	1-10, 1=Easier to Machine	5
THERMAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Coefficient of Thermal Expansion, 10E-4/°F	0.17	ASTM E831 (-40°F to 300°F)	0.31 10 <sup>-4</sup> /K
Deflection Temperature 264 psi, °F	532	ASTM D648	278 °C
Tg-Glass Transition (Amorphous), °F	527	ASTM D3418	275 °C
Continuous Service in Air (Max), °F	500	Long Term	260 °C
Thermal Conductivity, BTU-in/hr-ft <sup>2</sup> -°F	1.8	ASTM F433	0.26 W/m-K
ELECTRICAL PROPERTIES	VALUES	COMMENTS	METRIC VALUES
Dielectric Strength, Short Term, Volts/mil	580	ASTM D149	23 kV/mm
Surface Resistance, Ohm/Square	1E+16	Lower Limit; EOS/ESD S11.111	1E+16 Ohm/Square
Dielectric Constant, 1 MHz	4.2	ASTM D150	4.2
Dissipation Factor, 1 MHz	0.026	ASTM D150	0.026
CHEMICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Water Absorption Immersion, 24 hr., %	0.4	ASTM D570(2)	0.4 %
Water Absorption Immersion Sat, %	1.7	ASTM D570(2)	1.7 %
Acids, Weak (acetic, dilute HCl)	3	Acceptable Service	3
Acids, Strong (conc. HCl or sulfuric)	2	Limited Service	2
Alkalies, Weak (dilute NaOH)	2	Limited Service	2
Alkalies, Strong (conc. NaOH)	1	Unacceptable	1
Hydrocarbons, Aromatic (toluene)	3	Acceptable Service	3
Hydrocarbons, Aliphatic (gasoline)	3	Acceptable Service	3
Ketones, Esters (acetone)	3	Acceptable Service	3
Ethers (diethyl ether, THF)	3	Acceptable Service	3
Chlorinated Solvents (methylene chloride)	3	Acceptable Service	3
Alcohols (methanol, anti-freeze)	3	Acceptable Service	3
Continuous Sunlight	2	Limited Service	2
COMPLIANCE	ENGLISH VALUES	COMMENTS	METRIC VALUES
Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	5 (V-0)	UL94; 1/8 inch	5
FDA (1=Yes)	0	Not Compliant	0

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