



# LEHIGH VALLEY PLASTICS

We Shape The Industry

## Torlon® 4301 PAI, Polyamide-imide, extruded (bearing grade)

MECHANICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Specific Gravity	1.45	ASTM D792	1.45
Tensile Strength, psi	15000	ASTM D638	103 MPa
Tensile Modulus, psi	900000	ASTM D638	6,206 MPa
Elongation, %	3	ASTM D638	3 %
Flexural Strength, psi	23000	ASTM D790	159 MPa
Flexural Modulus, psi	800000	ASTM D790	5,516 MPa
Shear Strength, psi	16400	ASTM D732	113 MPa
Compressive Strength, psi	22000	ASTM D695, 10% Def.	152 MPa
Compressive Modulus, psi	950000	ASTM D695	6,550 MPa
Hardness, Rockwell E	70	ASTM D785	70
Hardness, Rockwell M	106	ASTM D785	106
Izod Impact (Notched), ft-lb/in	0.8	ASTM D256 Type A	43 J/m
Coefficient of Friction, Dynamic	0.2	Dry vs. Steel, QTM55007	0.2
Limiting PV, psi-fpm	22500	4:1 safety factor; QTM 55007	0.79 MPa-m/sec
k (wear) factor, 10 <sup>-10</sup> in <sup>3</sup> -min/lb-ft-hr	10	QTM 55010	10 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	0.14	ASTM E831 (-40°F to 300°F)	0.25 10 <sup>-4</sup> /K
Deflection Temperature 264 psi, °F	534	ASTM D648	279 °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	3.7	ASTM F433	0.53 W/m-K
ELECTRICAL PROPERTIES	VALUES	COMMENTS	METRIC VALUES
Surface Resistance, Ohm/Square	1E+13	Lower Limit; EOS/ESD S11.111	1E+13 Ohm/Square
Dielectric Constant, 1 MHz	6	ASTM D150	6
Dissipation Factor, 1 MHz	0.037	ASTM D150	0.037
CHEMICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Water Absorption Immersion, 24 hr., %	0.4	ASTM D570(2)	0.4 %
Water Absorption Immersion Sat, %	1.5	ASTM D570(2)	1.5 %
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	3	Acceptable Service	3
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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