

PROPERTIES

DuraForm™ Polyamide and DuraForm GF Properties

	UNITS	ASTM TEST METHOD	DURAFORM POLYAMIDE	DURAFORM GF	
GENERAL PROPERTIES					
Specific Gravity	20°C		D792	0.97	1.40
Moisture Absorption	23°C	%	D570	0.41	0.30
Powder Density	Tap	g/cm ³	D4164	0.59	0.84
Average Partilce Size ⁽¹⁾		m	Laser Diffraction	58	48
Particle Size Range ⁽¹⁾	90%	m	Laser Diffraction	25-92	10-96
THERMAL PROPERTIES					
Melting Point: T _m		°C	DSC	184	185
DTUL, 0.45 MPa		°C	D648	177	175
DTUL, 1.82 MPa		°C	D648	86	110
MECHANICAL PROPERTIES					
Tensile Strength		MPa	D638	44	38.1
Tensile Modulus		MPa	D638	1,600	5910
Tensile Elongation at Break		%	D638	9	2
Flexural Modulus		MPa	D790	1,285	3300
Impact Strength					
Notched Izod		J/m	D256	214	96
Unnotched Izod		J/m	D256	428	101
SURFACE FINISH					
Upper Facing					
As SLS Processed, Ra		m		8.5	6.2
After Finishing, Ra		m		0.13	1.0
CHEMICAL RESISTANCE					
Alkalines, hydrocarbons, fuels & solvents					
ELECTRICAL PROPERTIES					
Volume Resistivity					
22°C, 50% RH, 500V		ohm x cm	D257-93	3.1 x 10 ¹⁴	2.0E x 10 ¹⁴
Surface Resistivity					
22°C, 50% RH 500V		ohm x cm	D257-93	3.0 x 10 ¹⁴	2.3E x 10 ¹⁴
Dielectric Constant					
22°C, 50% RV, 5V 1000Hz			D150-95	2.9	3.7
Dielectric Strength					
22°C, 50% RV, in air, 5V V/sec		v/mm	D149-95a Method A	1.6 x 10 ⁴	1.5E x 10 ⁴
Comparative Tracking Index		v	D5288-92 and/or IEC Standard 112	585, TI-Cu <1mm depth	TBD

(1) Results are based upon volume distribution of particles.

Data was generated from the testing of SLS® parts produced with the DuraForm PA material under typical processing conditions. (New material processed with a laser power of 4 watts, scan speed of 1675 mm/sec, scan spacing of 0.1 mm, and a layer thickness of 0.1 mm in the Sinterstation 2500.

Expected shelf life of this material is at least twelve months, when stored in dry conditions at ambient temperatures.

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