

LS MATERIAL SPECIFICATIONS

Nylon 12 PA

Highlights

- Excellent surface resolution/feature details
- Good chemical resistance
- Low moisture absorption
- Produce durable production parts without tooling

Applications

- Housings and enclosures
- Impellers, connectors, and complex ductwork
- Snap-fit designs
- Low volume end-use parts
- Complex production or prototype plastic parts

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	English	Metric
Color/Appearance	Visual	White	White
Density	DIN 53466	0.034 lb/in ³	0.95 g/cm ³
Elongation at Break	ASTM D638	4 - 15%	4 - 15%
Flexural Strength	ASTM D790	6,850 psi	47 MPa
Flexural Modulus	ASTM D790	188,549 psi	1,300 MPa
Heat Deflection Temp @66 psi	ASTM D648	350°F	177°C
Heat Deflection Temp @264 psi	ASTM D648	187°F	86°C
Izod Impact Strength (notched)	ASTM D256	4.12 ft-lb/in	220 J/m
Izod Impact Strength (unnotched)	ASTM D256	8.24 ft-lb/in	440 J/m
Tensile Modulus	ASTM D638	246,500 psi	1,700 MPa
Tensile Strength	ASTM D638	6,815 psi	46 MPa
Surface Finish	Up-facing surfaces	350 microinches	9 µm RA
Volume Resistivity (22°C, 50%RH, 500V)	ASTM D257-93	—	3.1 x 10 ¹⁴ ohm x cm

The material properties provided herein are for reference purposes only. Actual values may vary significantly as they are dramatically affected by part geometry and process parameters. Material specifications are subject to change without notice.

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LS MATERIAL SPECIFICATIONS

Nylon 12 GF

Highlights

- Glass filled Nylon 12 material
- Excellent mechanical stiffness
- Elevated temperature resistance
- Dimensionally stable

Applications

- Housings and enclosures
- Consumer sporting goods
- Complex prototype plastic parts
- Form, fit, or functional prototypes
- Parts requiring stiffness

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	English	Metric
Color/Appearance	Visual	Light Grey	Light Grey
Density	DIN 53466	0.045 lb/in ³	1.25 g/cm ³
Elongation at Break	ASTM D638	1.5 - 3%	1.5 - 3%
Flexural Strength	ASTM D790	8,800 psi	61 MPa
Flexural Modulus	ASTM D790	325,000 psi	2,241 MPa
Heat Deflection Temp @66 psi	ASTM D648	354°F	179°C
Heat Deflection Temp @264 psi	ASTM D648	273°F	134°C
Izod Impact Strength (notched)	ASTM D256	0.8 ft-lb/in	40 J/m
Izod Impact Strength (unnotched)	ASTM D256	2.3 ft-lb/in	120 J/m
Tensile Modulus	ASTM D638	420,000 psi	2,896 MPa
Tensile Strength	ASTM D638	5,200 psi	36 MPa
Surface Finish	Up-facing surfaces	6.5 µm RA	6.5 µm RA
Coefficient of Thermal Expansion: 77°F-212°F (25-100°C)	ASTM E831	61.4 10 ⁻⁶ µin/in°F	110.5 10 ⁻⁶ µm/m°C
Coefficient of Thermal Expansion: 212°F-338°F (100-170°C)	ASTM E831	87.7 10 ⁻⁶ µin/in°F	157.8 10 ⁻⁶ µm/m°C
Volume Resistivity (22°C, 50%RH, 500V)	ASTM D257-93	—	2.0 x 10 ¹⁴ ohm x cm

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LS MATERIAL SPECIFICATIONS

Nylon 12 AF

Highlights

- Aluminum filled composite polyamide producing strong, stiff parts with a grey metallic appearance
- Improved tensile modulus and flex modulus
- Good wear resistance and detail reproduction
- Suitable for parts requiring superior surface finish

Applications

- Aerospace, automotive, packaging, electronics, consumer products, industrial, and OEM products
- Functional components
- Intake manifolds, air ducts
- Illustrative models with metallic appearance
- Jigs and fixtures

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	English	Metric
Color/Appearance	Visual	Grey Metallic	Grey Metallic
Density	DIN 53466	0.049 lb/in ³	1.36 g/cm ³
Elongation at Break	ASTM D638	1.5 - 3.5%	1.5 - 3.5%
Flexural Strength	ASTM D790	7,832 psi	54 MPa
Flexural Modulus	ASTM D790	289,250 psi	1,994 MPa
Heat Deflection Temp @66 psi	ASTM D648	351°F	177°C
Heat Deflection Temp @264 psi	ASTM D648	279°F	137°C
Tensile Modulus	ASTM D638	373,800 psi	2,577 MPa
Tensile Strength	ASTM D638	4,628 psi	32 MPa
As Processed Surface Finish	Up-facing surfaces	300 - 400 RA	7.6 - 10.2 μm
Volume Resistivity (74°F, 35.4% RH)	—	—	2.5E+03 ohms-cm
Surface Resistant (74°F, 35.4% RH)	—	—	3.1E+10 ohms-cm



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