



3D Printing Filament

TECHNICAL DATA SHEET - MH Build Series PETG-ESD

Commercial Name: MatterHackers Build Series PETG-ESD

Designation: Static-dissipative (ESD-safe) 3D printing filament material

Manufacturer: MatterHackers

Product Description

MH Build Series PETG-ESD is an affordable static-dissipative PETG filament for printing fixtures, trays, enclosures, and housings that handle static-sensitive electronics. Carbon nanotubes compounded into the PETG give a surface resistance of $10^9 \Omega$ and a permanent antistatic effect.

- Static-dissipative: $10^9 \Omega$ surface resistance (DIN IEC 60093)
- Smooth print surface with balanced strength, stiffness, and toughness
- Prints at speeds up to 300 mm/s
- Anti-dust and antistatic, for chip packaging, integrated circuit parts, and precision electronic components

Storage

MH Build Series PETG-ESD filament should be stored between 15 - 25°C, in its original packaging, in a clean and dry environment. When following these recommended storage procedures the minimum shelf life will exceed 12 months.

Dry at 65°C for at least 8 hours before printing if the filament has absorbed moisture. PETG-ESD is not UV resistant; keep spools and printed parts out of prolonged direct sunlight.

Material Specifications

PROPERTY	VALUE	TEST METHOD
Density	1.28 g/cm ³	GB/T 1033
Melt Flow Index (230°C / 5 kg)	18.1 g/10 min	GB/T 3682
Heat Deflection Temperature (0.45 MPa)	68°C	GB/T 1634
Surface Resistance	$10^9 \Omega$	DIN IEC 60093
Tensile Strength (X-Y)	48.1 MPa	GB/T 1040
Tensile Strength (Z)	19.3 MPa	GB/T 1040
Elongation at Break (X-Y)	9.0%	GB/T 1040
Elongation at Break (Z)	2.5%	GB/T 1040
Flexural Strength (X-Y)	77.7 MPa	GB/T 9341
Flexural Strength (Z)	41.2 MPa	GB/T 9341
Flexural Modulus (X-Y)	2163 MPa	GB/T 9341
Flexural Modulus (Z)	1483 MPa	GB/T 9341



PROPERTY	VALUE	TEST METHOD
Izod Impact Strength (X-Y)	4.95 kJ/m ²	GB/T 1843
Izod Impact Strength (Z)	1.93 kJ/m ²	GB/T 1843

X-Y: specimen printed flat. Z: specimen printed upright (across layers).

Test Specimen Conditions

CONDITION	VALUE
Printer	Bambu P1S, 0.4 mm nozzle
Extruder Temperature	240°C
Build Platform Temperature	70°C
Walls / Top-Bottom Layers	2 / 3
Infill Density	100%
Fan Speed	40%

Typical values from printed test specimens. Actual results depend on printer, settings, and environment.

Filament Specifications

PROPERTY	VALUE
Diameter 1.75mm	1.75mm ±0.05 mm
Net Weight	1 kg
Suggested Print Temperature	240-260°C
Suggested Bed Temperature	70°C (PEI)
Suggested Print Speed	Up to 300 mm/s
Cooling Fan	40-90%
Nozzle Size	0.2-0.8 mm
Nozzle Material	Mildly abrasive. Hardened steel recommended for regular use
Drying	65°C for 8+ hours

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