COEX™

TECHNICAL DATA SHEET

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HIPS 3D Printer Filament

High impact polystyrene (HIPS) · Product code CX06 · 1.75 mm and 2.85 mm

Base resin: High impact polystyrene (HIPS)

Typical values for the base resin. Printed parts vary with print settings, orientation and moisture content. Resin maker: typical properties, not to be considered specification limits.

Physical properties

Property	Standard	Unit	Typical value
Melt flow index (200 °C/5 kg)	ASTM D-1238	g/10 min	2.8
Specific gravity	ASTM D-792		1.04
Coefficient of linear thermal expansion (10^{-5})	ASTM D-696	cm/cm/°C (in/in/°F)	9 (5)
Rockwell hardness, R scale	ASTM D-785		107
Mold shrinkage (10^{-3})	ASTM D-955	cm/cm (in./in.)	4 to 8
UL classification	UL 94		HB (UL file E326906)

Mechanical properties (injection molded)

Property	Standard	Unit	Typical value
Tensile strength	ASTM D-638	MPa (psi)	27 (3,900)
Tensile rupture	ASTM D-638	MPa (psi)	25.5 (3,700)
Elongation	ASTM D-638	%	65
Tensile modulus	ASTM D-638	MPa (psi)	1,900 (270,000)
Flexural strength	ASTM D-790	MPa (psi)	36 (5,200)
Flexural modulus	ASTM D-790	MPa (psi)	1,900 (275,000)
Izod impact @ 23 °C	ASTM D-256	J/m (ft·lb/in)	112 (2.1)
Izod impact @ 23 °C (compression molded)	ASTM D-256	J/m (ft·lb/in)	95 (1.8)

Thermal properties

Property	Standard	Unit	Typical value
Heat deflection temperature @ 264 psi	ASTM D-648	°C (°F)	79 (174)
Heat deflection temperature @ 66 psi	ASTM D-648	°C (°F)	89 (192)
Vicat softening temperature	ASTM D-1525	°C (°F)	101 (214)

Filament specifications

Diameter	Nominal	Minimum	Maximum	Tolerance
1.75 mm	1.75 mm (0.0689 in)	1.72 mm (0.0677 in)	1.78 mm (0.0701 in)	±0.03 mm (±0.0012 i
2.85 mm	2.85 mm (0.1122 in)	2.79 mm (0.1098 in)	2.91 mm (0.1146 in)	±0.06 mm (±0.0024 i

Recommended print settings

Nozzle temperature	245–265 °C
Bed temperature	80–100 °C
Enclosure	Necessary
Part cooling fan	Off for the first layer; 0–30% for general printing; up to 30% for bridges, overhangs and layers under 15 seconds
Drying	If needed, 65 °C for 2–4 hours

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