IEMAI®

3D printing solutions for high performance materials

ASA Technical Data Sheet (TDS)

ASA is an alternative to ABS with an improved weather resistance. Its UV resistance and excellent mechanical properties make it the perfect choice for real life applications.

IEMAI 3D high performance ASA filament is based on FFF/FDM technology, with a diameter of 1.75 mm, 230-260 °C printing temperatures and 90-100 °C hotbed temperatures; allow it to have excellent inter-layer adhesion, and able to improve the strength, durability, and shock resistance of the prototype.

ASA is widely used in mechanical, automotive, electronic, textile, and construction industries, which is a versatile engineering thermoplastic.

Property	Testing Method	Typical Value
Density	ISO 1183, GT/T1033	1.14 g/cm^2 at 21°C
Melt Index	200°C, 10Kg	25g/ 10 min
Light Transmission	N/A	N/A
Flame Retardancy	UL 94	V2

Property	Testing Method
Effect of weak acids	Resistance
Effect of strong acids	Slightly Resistance
Effect of weak alkalis	Resistance
Effect of strong alkalis	Slightly Resistance
Effect of organic solvent	Not Resistant
Effect of oils and grease	Resistance
Effect of Sunlight	Not Resistant

Property	Testing Method	Typical Value
Glass Transition	DSC, 10°C/ min	97.8°C
Melting Temperature	DSC, 10°C/ min	N/A
Crystallization Temperature	DSC, 10°C/ min	N/A
Decomposition Temperature	TGA, 20°C/ min	N/A
Vicat Softening Temperature	ISO 306 GB/T 1633	105.3°C

Heat Deflection Temperature	ISO75.1 1.8MPa	100.2°C
Heat Deflection Temperature	ISO 75 0.45MPa	102.6°C
Thermal Conductivity	N/A	N/A
Heat Shrinkage Rate	N/A	N/A

Property	Testing Method	Typical Value
Young's modulus (X-Y)	ISO 527, GB/T 1040	2379 ± 157 MPa
Young's modulus (Z)		1965 ± 136 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	43.8 ± 0.8 MPa
Tensile Strength (Z)		32 ± 1.8 MPa
Elongation at Break (X-Y)	ISO 527, GB/T 1040	6.7 ± 0.6 %
Elongation at Break (Z)		1.65 ± 0.2 %
Bending Modulus (X-Y)	ISO 178, GT/B 9341	3206 ± 108 MPa
Bending Modulus (Z)		N/A
Bending Strength (X-Y)	ISO 178, GT/B 9341	73.4 ± 2.1 MPa
Bending Strength (Z)		N/A
Charpy Impact Strength (X-Y)	ISO 179, GB/T 9343	10.3 ± 0.4 kJ/m^2
Charpy Impact Strength (Z)		6.7 ± 1.4 kJ/m^2

Print Recommendation	
Printing Temperature	230-260°C
Bed Temperature	90-100°C
Print Speed	30-50 mm/s
Chamber Temperature	50-70 °C
Cooling Fan	OFF