



# Antero 800NA

## DATA SHEET

Antero™ 800NA is a PEKK-based FDM® thermoplastic. It combines FDM's design freedom and ease of use with the excellent strength, toughness and wear-resistant properties of PEKK material.

Antero 800NA exhibits high heat resistance, chemical resistance, low outgassing and dimensional stability, particularly in large parts.

Appropriate applications include aircraft components exposed to jet fuel, oil and hydraulic fluid, spacecraft parts that demand low outgassing and chemical-resistant industrial parts. Using Antero 800NA with FDM technology avoids the waste associated with subtractive manufacturing of high-cost bulk PEKK material.

Antero 800NA is available on Fortus 450mc™ 3D Printers and is compatible with breakaway support material.



MECHANICAL PROPERTIES	TEST METHOD	ENGLISH		METRIC	
		XZ ORIENTATION	ZX ORIENTATION	XZ ORIENTATION	ZX ORIENTATION
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	13,504 psi +/- 57 psi	6,650 psi +/- 765 psi	93 MPa +/- 0.39 MPa	46 MPa +/- 5.23 MPa
Tensile Strength, Ultimate (Type 1, 0.125", 0.2"/min)	ASTM D638	13,504 psi +/- 57 psi	6,650 psi +/- 765 psi	94 MPa +/- 0.39 MPa	47 MPa +/- 5.23 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	448.933 ksi +/- 39.535 ksi	505.266 ksi +/- 108.185 ksi	3095 MPa +/- 272 MPa	34834 MPa +/- 745 MPa
Elongation at Break (Type 1, 0.125", 0.2"/min)	ASTM D638	6.40% <sup>1</sup> +/- 1.05%	1.22% <sup>1</sup> +/- 0.28%	6.40% <sup>1</sup> +/- 1.05%	1.22% <sup>1</sup> +/- 0.28%
Elongation at Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	4.31% +/- 0.58%	1.1% <sup>2</sup> +/- 0.53%	4.31% +/- 0.58%	1.11% <sup>2</sup> +/- 0.53%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	20,548 psi +/- 477 psi	9,349 psi +/- 1514 psi	141 MPa +/- 3MPa	64 MPa +/- 10 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	445.572 ksi +/- 10.796 ksi	388.693 ksi +/- 12.96 ksi	3072 MPa +/- 74 MPa	2680 MPa +/- 89 MPa
Flexural Strain at Break (Method 1, 0.05"/min)	ASTM D790	No break	2.4% <sup>3</sup> +/- 0.39%	No break	2.41% <sup>3</sup> +/- 0.39%
Notched Impact (Method A, 23°C)	ASTM D256	0.69 ft-lb/in +/- 0.12 ft-lb/in	0.51 ft-lb/in +/- 0.09 ft-lb/in	37 J/m +/- 6 J/m	27 J/m +/- 5 J/m
Unnotched Impact (Method A, 23°C)	ASTM D256	34.2 ft-lb/in +/- 23.5 ft-lb/in	1.40 ft-lb/in +/- 0.52 ft-lb/in	1826 J/m +/- 1254 J/m	75 J/m +/- 28 J/m
Compressive Strength, Yield (Method 1, 0.05"/min)	ASTM D695	14,572 psi +/- 317 psi	14,595 psi +/- 439 psi	100 MPa +/- 2 MPa	100 MPa +/- 3 MPa
Compressive Strength, Ultimate (Method 1, 0.05"/min)	ASTM D696	14,572 psi +/- 317 psi	14,595 psi +/- 439 psi	100 MPa +/- 2MPa	100 MPa +/- 3 MPa
Compressive Modulus Method 1, 0.05"/min)	ASTM D697	355.608 ksi +/- 1.612 ksi	336.284 ksi +/- 12.101 ksi	2451 MPa +/- 11 MPa	2319 MPa +/- 83 MPa

<sup>1</sup> 5/30 bars did not break so elongation at end of test for those 5 bars was used instead

<sup>2</sup> 8/30 bars did not yield per the MTS machine, average calculated with 22 samples

<sup>3</sup> 11/30 bars did not break, only 19 values were used to calculate

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THERMAL PROPERTIES <sup>2</sup>	TEST METHOD	ENGLISH	METRIC
Heat Deflection (HDT) @ 66 psi	ASTM D648	302°F	150°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	296.6°F	147°C
Glass Transition Temperature (Tg)	DMA (SSYS)	300.2°F	149°C
Coefficient of Thermal Expansion (X)	ASTM E831	21.79 µin/(in·°F)	39.23 µin/(m·°C)
Coefficient of Thermal Expansion (Y)	ASTM E831	29.52 µin/(in·°F)	53.14 µin/(m·°C)
Coefficient of Thermal Expansion (Z)	ASTM E831	28.06 µin/(in·°F)	50.52 µin/(m·°C)

ELECTRICAL PROPERTIES <sup>4</sup>	TEST METHOD	VALUE RANGE	
		XY	ZX
Volume Resistivity	ASTM D257	> 1.4 x 10 <sup>14</sup> Ω	> 1.4 x 10 <sup>14</sup> Ω
Dielectric Constant	ASTM D150-98	3.23	3.32
Dissipation Factor	ASTM D150-98	0.004	0.003

The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions. Tested parts were built on Fortus 450mc @ 0.010" (0.254 mm) slice. Fluids tested include Skydrol 500, MEK (methyl ethyl ketone), JP8 aviation fuel and kerosene. Product specifications are subject to change without notice.

OUTGASSING	TEST METHOD	VALUE
Total Mass Loss (TML)	ASTM E595	0.27%
Collected Volatile Condensable Material (CVCM)	ASTM E595	0.01%
Water Vapor Recovered (WVR)	ASTM E595	0.15%

The performance characteristics of these materials may vary according to application, operating conditions or end use. Each user is responsible for determining the Stratasys material is safe, lawful and technically suitable for the intended application, as well as for identifying the proper disposal (or recycling) method consistent with applicable environmental laws and regulations. Stratasys makes no warranties of any kind, express or implied, including, but not limited to, the warranties of merchantability, fitness for a particular use or warranty against patent infringement.

BURN TESTING	TEST METHOD	VALUE
Horizontal Burn (15 sec)	14 CFR/FAR 25.853	Passed
Vertical Burn (60 sec)	14 CFR/FAR 25.853	Passed
Vertical Burn (12 sec)	14 CFR/FAR 25.853	Passed
45° Ignition	14 CFR/FAR 25.853	Passed
Heat Release	14 CFR/FAR 25.853	Passed
NBS Smoke Density (flaming)	ASTM F814/E662	Passed
NBS Smoke Density (non-flaming)	ASTM F814/E662	Passed

<sup>4</sup> Literature value unless otherwise noted.

OTHER <sup>2</sup>	TEST METHOD	VALUE
Specific Gravity	ASTM D792	1.28
Chemical Compatibility	MIL-STD-810G	No visible damage

SYSTEM	LAYER THICKNESS	SUPPORT	AVAILABLE
AVAILABILITY	CAPABILITY	STRUCTURE	COLORS
Fortus 450mc™	0.010 inch (0.254 mm)	SUP8000B (breakaway)	■ Natural



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