



Technical Data Sheet

Issued: March 7, 2018
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MG94 ABS Filament

SECTION 1, IDENTIFICATION

Product Part Number: [F06103](#)

Manufacturer: Airwolf 3D

Address: 11208 Young River Avenue,
Fountain Valley, CA 92708

Phone Number: +1 949-478-2933

Recommended Use: 3D printing filament

Restrictions on Use: For use with 3D printers

AIRWOLF 3D TESTED PROPERTIES

Ultimate Strength: 46.4 MPa

Elongation at Break: 21.6 %

(see "Methodology of Test" for details)

SECTION 2, DESCRIPTION

Description: Acrylonitrile butadiene styrene for functional prototypes or end-use production parts. With superior layer bonding, high printability, and a smooth finish ABS.

Applications: Concept modeling
Visual and functional prototyping
Manufacturing tools
End use parts
Short run manufacturing
Automotive

Key Features: Excellent mechanical properties and interlayer adhesion, good aesthetics, minimal warping and reliable bed adhesion.

SECTION 3, SPECIFICATIONS (PER MANUFACTURER)

EXTRUDER TEMPERATURE	235C - 260C
BED TEMPERATURE	110C - 130C
HEATED BED	Required

RECOMMENDED BUILD SURFACE	Wolfbite for ABS, PETG, TPU, and TPE
DIAMETER	2.88mm
COLOR	Black, Black 5lbs, Natural, Natural 5lbs, White, White 5lbs
COMPATIBLE MACHINE	AXIOM , AXIOM 20 , AXIOM Dual Extruder, EVO , HD Series
COMPATIBLE SUPPORT MATERIAL	HydroFill Water-Soluble Support
GENERAL	
Density ISO 1183	1.04 g/cm ³
THERMAL	
HDT, 0.45 MPa, 3.2 mm, unannealed ASTM D 648	95 C
HDT, 1.82 MPa, 3.2mm, unannealed ASTM D 648	82 C
PHYSICAL	
Melt Flow Rate, 230°C/3.8 kgf ASTM D 1238	11.7 g/10 min
Vicat Softening Temp, Rate B/50 ASTM D 1525	98 C
Specific Gravity ASTM D 792	1.05
Shrinkage, flow, 3.2 mm (5)	0.5 – 0.8 %
MECHANICAL	
Ultimate Strength when 3D Printed:	46.4 MPa
Elongation at Break when 3D Printed:	21.6 %
UL FLAMMABILITY	
UL Recognized, 94HB Flame Class Rating (3) 1.52 mm	UL 94

SECTION 4, ADDITIONAL INFORMATION

For challenging prints with complex internal geometry, MG94 ABS is compatible with [HydroFill Water-Soluble Support](#).

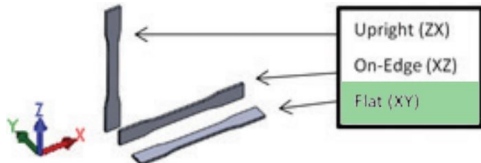
Acetone vapor treatment can minimize layer lines.

Methodology of Tests performed by Airwolf 3D:

Airwolf 3D tested this material, in its 3d printed form, for the mechanical properties of “Ultimate Strength” and “Elongation at Break” per ISO 527 standards. Specimens were printed on an AXIOM 3D printer with a nozzle orifice size 0.5mm. The specimens were “dog bone” shaped with a size of 75mm x 10mm x 2mm and printed with 90% fill density. Wolfbite adhesive was used to adhere the part to the heated bed during print cycle. The default “Standard” setting in APEX slicing software was used. Details are as follows:

Layer height:	0.22mm
Shell thickness:	0.5mm
Bottom/Top thickness:	1.2mm
Fill density:	90%
Printing temp:	250C
Bed temp:	110C
Flow:	100%
Color:	Natural

Specimens were printed flat on the XY plane.



The equipment used: MODEL 1ST Electromechanical Testing Machine by Tinius Olsen (Crosshead).

A minimum of six specimens were tested. The Ultimate Strength and Elongation at Break values were determined by calculating the average of all specimens tested.

Disclaimer

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Ultimate Strength MPa	Elongation at Break %	Yield Strength MPa
46.8	23.3	N/F
46.6	21.3	N/F
45.4	31.2	N/F
47.3	20.3	N/F
45.9	15.1	N/F
46.8	18.4	N/F
N/F	N/F	N/F
Average 46.4	21.6	N/A
SD	5.46	N/A

