

# Fused Deposition Modeling ASA

Acrylonitrile Styrene Acrylate



## Product Description

ASA can be considered a true successor to ABS. Compared to ABS, it's UV stable, it doesn't suffer from shrinking so badly and the fumes produced are much less noticeable. ASA 3D prints are durable, tough and suitable for a wide range of applications. The solidification temperature is also higher compared to PLA and PETG, which gives objects printed from ASA an excellent temperature resistance – there are no signs of deformation up to temperatures near 93 °C which is ideal for outdoor use.

## Applications

Its use is universal but especially suitable for outdoor equipment and accessories, automotive components, functional prototypes, & architectural models.

## Tolerances

For well-designed parts, tolerances of  $\pm 0.012$  in. plus  $\pm 0.002$  in./in. for each additional inch can typically be achieved depending on part geometry. Note that tolerances may change depending on part geometry.



## Key Material Benefits

- Good Strength and Toughness
- Excellent UV Stability
- Good Chemical Resistance
- Smooth Finish



INTEGRATED MATRIX SOLUTIONS

262-364-6281 | [integratedmatrixsolutions.com](https://integratedmatrixsolutions.com)

Brookfield, WI 53005 USA

Version 1.1 | January, 2023

All of the figures contained on this datasheet are approximate and dependent on a number of factors, including but not limited to, machine and process parameters. The information provided is therefore, not binding and not deemed to be certified.

@ Integrated Matrix Solutions 2021-2023

# Properties

## ASA (Acrylonitrile Styrene Acrylate)

Material Properties	Value	Test Method	
Colors	Jet Black, Galaxy Black, Natural, Sapphire Blue, White, Red, Orange	-	
Density [g/cm <sup>3</sup> ]	1.07	ISO 1183	
Moisture Absorption in 24 hours [%] 24 °C; humidity 22 %	0.16	Supplier Tested	
Moisture Absorption in 7 days [%] 24 °C; humidity 22 %	0.17	Supplier Tested	
Heat Deflection Temperature (0.45 MPa) [°C]	93	ISO 75	
Heat Deflection Temperature (1.80 MPa) [°C]	86	ISO 75	
Tensile Yield Strength for Filament [MPa]	40 ± 1	ISO 527	
Hardness – Shore D	78	Supplier Tested	
Mechanical Properties	Value (X-Y)	Value (X-Z)	Test Method
Tensile Yield Strength [MPa]	42 ± 1	45 ± 2	ISO 527-1
Tensile Modulus [GPa]	1.6 ± 0.1	1.7 ± 0.1	ISO 527-1
Elongation at Yield Point [%]	3.4 ± 0.2	3.8 ± 0.2	ISO 527-1
Flexural Strength [MPa]	64 ± 1	69 ± 1	ISO 178
Flexural Modulus [GPa]	2.0 ± 0.1	1.9 ± 0.1	ISO 178
Deflection at Flexural Strength [mm]	9.0 ± 0.1	9.0 ± 1.0	ISO 178
Impact Strength Charpy [kJ/m <sup>2</sup> ] - Charpy Unnotched	25 ± 3	39 ± 11	ISO 179-1
Impact Strength Charpy Notched [kJ/m <sup>2</sup> ] - Charpy Notched	12 ± 1	15 ± 3	ISO 179-1

\*Technical Values from Supplier Data Sheet

