TECHNICAL DATA SHEET

Prusament ASA by Prusa Polymers

ASA is widely used filament in FDM 3D printing. It is mechanically resistant material. Compered to PLA and PETG it is more heat resistance.

APPLICATIONS: Printing of mechanical and functional parts suitable for outdoor usage.

NOT SUITABLE FOR: Printing of large parts might be complicated or need advanced user approach.

POST-PROCESSING: ASA can be post-processed by Acetone vapours.

IDENTIFICATION:

Trade name	Prusament ASA
Chemical name	Acrylonitrile-Styrene-Acrylate
Usage	FDM 3D printing
Diameter	1.75 ± 0.02 mm
Manufacturer	Prusa Research, Prague, Czech Republic

RECOMMENDED PRINT SETTINGS:

Nozzle Temperature [°C]	260 ± 5
Heatbed Temperature [°C]	110 ± 5
Print Speed [mm/s]	up to 200
Cooling Fan Speed [%]	30 % (0–50 %*)
Skirt height	up to height of printed part

*Depends on geometry of printed object, to improve overhangs and bridges set 30% or higher cooling in Slic3r, for larger prints without bridges cooling off can work better. Brim 3mm and more can improve adhesion of edges and corners to build-sheet in case of larger objects.

TYPICAL MATERIAL PROPERTIES:

Physical Properties	Typical Value	Method
Specific Gravity [g/cm3]	1.07	ISO 1183
MFR [g/10min](1)	21	ISO 1133
MVR [cm3/10min](1)	22	ISO 1133
Moisture Absorption 24 hours [%](2)	0.23	Prusa Polymers
Moisture Absorption 7 days [%](2)	0.25	Prusa Polymers
Heat Deflection Temperature (0,45 MPa) [°C]	93	ISO 75
Heat Deflection Temperature (1,80 MPa) [°C]	86	ISO 75
Tensile Yield Strength Filament [MPa]	40 ± 1	ISO 527

MECHANICAL PROPERTIES OF PRINTED TESTING SPECIMENS(3):

Property / print direction	Horizontal	Vertical X,Y-Axis	Vertical Z-Axis	Method
Tensile Yield Strength [MPa]	42 ± 1	43 ± 1	9 ± 1	ISO 527-1
Tensile Modulus [GPa]	1,6 ± 0,1	1,7 ± 0,1	1,4 ± 0,1	ISO 527-1
Elongation at Yield Point [%]	3,3 ± 0,1	3,3 ± 0,2	0,6 ± 0,1	ISO 527-1
Impact Strength Charpy(4) [kJ/m2]	40 ± 10	39 ± 5	~2	ISO 179-1
Impact S.Charpy notch.(5) [kJ/m2]	14 ± 1	13 ± 1	~2	ISO 179-1

(1) 220°C; 10kg |

(2) 28 °C; humidity 37 %

(3) Original Prusa i3 MK3S 3D printer was used to make testing specimens. Slic3r Prusa Edition v2.0.0 was used to create G-codes with following settings: Prusament ASA; Print settings 0,20mm FAST (layers 0,2 mm); solid layers Top:0 Bottom:0; Infill 100% Rectilinear, infill print speed 200mm/s; extruder temperature 265°C all layers; bed temperature 110°C all layers; other parameters set default

(4) Charpy unnotched - Edgewise direction of blow according to ISO 179-1

(5) Charpy notched - Edgewise direction of blow according to ISO 179-1

Disclamer

The results presented in this data sheet are just for your information and comparison. Values are significantly dependent on print settings, operators experiences and surrounding conditions. Everyone have to consider suitability and possible consequences of printed parts usage. Prusa Research can not carry any responsibility for injures or any loss caused by using of Prusament ASA material. Before use ASA material read properly all the details in available safety data sheet (SDS).