Technical Data Sheet

Ultrafuse ASA

Date / Revised: 13.11.2019

Version No.: 2.2

General information

Components

Acetonitrile styrene acrylate based filament for Fused Filament Fabrication.

Product Description

Ultrafuse ASA is a high-performance thermoplastic with similar mechanical properties as ABS. ASA offers additional benefits such as high outdoor weather resistance. The UV resistance, toughness, and rigidity make it an ideal material to 3D-print outdoor fixtures and appliances without losing its properties or color. When also taking into account the high heat resistance and high chemical resistance, this filament is a good choice for many types of applications.

Delivery form and warehousing

Ultrafuse ASA filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

Product safety

Recommended: Process materials in a well ventilated room, or use professional extraction systems. For further and more detailed information please consult the corresponding material safety data sheets.

Notice

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

Recommended 3D-Print processing parameters	
Nozzle Temperature	260 – 280 °C / 500 – 536 °F
Build Chamber Temperature	Closed chamber, passively heated
Bed Temperature	100 – 120 °C / 212 – 248 °F
Bed Material	Spray, PC adhesive
Nozzle Diameter	≥ 0.4 mm
Print Speed	30 – 60 mm/s

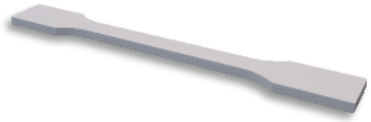
Drying Recommendations	
Drying recommendations to ensure printability	60 °C in a hot air dryer or vacuum oven for 4 to 16 hours

Please note: To ensure constant material properties the material should always be kept dry.

General Properties		Standard
Printed Part Density	1069 kg/m^3 / 66.7 lb/ft^3	ISO 1183-1

Thermal Properties		Standard
HDT at 1.8 MPa	92 °C / 198 °F	ISO 75-2
HDT at 0.45 MPa	101 °C / 214 °F	ISO 75-2
Glass Transition Temperature	112 °C / 234 °F	ISO 11357-2
Melt Volume Rate	3.9 cm^3/10 min / 0.2 in^3/10 min (260 °C, 2.16 kg)	ISO 1133

Mechanical Properties



Print direction	Standard	XY	XZ	ZX
		Flat	On its edge	Upright
Tensile strength	ISO 527	34.6 MPa / 5.0 ksi	-	12.0 MPa / 1.7 ksi
Elongation at Break	ISO 527	4.5 %	-	1.0 %
Young's Modulus	ISO 527	1828 MPa / 265 ksi	-	1400 MPa / 203 ksi
Flexural Strength	ISO 178	59.4 MPa / 8.6 ksi	61.2 MPa / 8.9 ksi	19.9 MPa / 2.9 ksi
Flexural Modulus	ISO 178	1733 MPa / 251 ksi	1638 MPa / 238 ksi	1041 MPa / 151 ksi
Flexural Strain at Break	ISO 178	5.4 %	5.2 %	2.9 %
Impact Strength Charpy (notched)	ISO 179-2	8.9 kJ/m²	15.5 kJ/m²	2.7 kJ/m²
Impact Strength Charpy (unnotched)	ISO 179-2	42.7 kJ/m²	41.2 kJ/m²	5.1 kJ/m²
Impact Strength Izod (notched)	ISO 180	8.7 kJ/m²	11.4 kJ/m²	1.9 kJ/m²
Impact Strength Izod (unnotched)	ISO 180	36.8 kJ/m²	39.3 kJ/m²	6.8 kJ/m²