

Technical Data Sheet

Ultrafuse® Pellets rPETG

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General information

Product Description

Ultrafuse® Pellets rPETG is the sustainable, high-performance choice for Large Scale Additive Manufacturing (LSAM), for both newcomers and seasoned LSAM professionals. Ultrafuse® Pellets rPETG excels in large-scale printing applications that demand superior aesthetics and product stability: Pre-dried and ready to use, this user-friendly material offers superior optical quality with batch-to-batch consistency and minimal warpage and distortion. Made from traceable, food-safe recycled materials, Ultrafuse® Pellets rPETG are available in a crystal-clear natural grade, translucent blue and solid black, and deliver a high-gloss, low-haze finish that meets the highest standards for optical appearance and surface quality with a sustainable footprint.

Components

Ultrafuse® Pellets rPETG are produced from recycled polyethylene terephthalate (PET) that has been modified with glycol (G). Sourced from traceable post-industrial PETG packaging waste, this grade is well-suited for fused granulate fabrication (FGF). Its unique recycling process ensures materials undergo food contact clearance upon leaving the recycling steps.

Delivery form and warehousing

Ultrafuse® Pellets rPETG pellets should be stored at 15 - 25°C in its originally sealed packaging 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.

Disclaimer

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.

Values in this document are average values, measured and calculated according to the instructions in the listed standards. The used specimens are produced with the Fused Filament Fabrication or Fused Granulate Fabrication or Injection Moulding methods.

Measured values can vary depending on used print orientation and print parameters.

Please contact us for further product information, like for example REACH, RoHS, FCS.

Pellet Properties

Pellet diameter	Approx. 2 mm
Pellet length	Approx. 3 mm
Pellet size	1 ± 0.25 g
Pellet shape	Cylindrical, cold cut
Available colors	Natural, Translucent Blue, Black

Packaging

Available in 10 kg bag or in 1 mt big bag

Drying Recommendations

Temperature	Min. 55 °C; Max. 65 °C (prevent sticking)
Time	6 - 13 h
Condition	200 - 500 ppm

Drying conditions are depending on hardware setup. Dehumidifying dryer with agitator can use higher temperatures for short time (65°C for 4h)

Recommended Extrusion Parameters

Zone 1 Temperature	195 - 200 °C
Zone 2 Temperature	200 - 235 °C
Zone 3 Temperature	195 - 235 °C
Nozzle Temperature	195 - 235 °C
Extrudate Temperature	200 - 245 °C

Processing Parameters used for 3D-Printed Test Specimens

Printer	Ultimaker 3
Nozzle Temperature	235 °C / 455 °F
Build Chamber Temperature	With cover
Bed Temperature	75 °C / 167 °F
Bed Material	Glass + adhesive spray
Nozzle Diameter	0.4 mm
Print Speed	40 mm/s

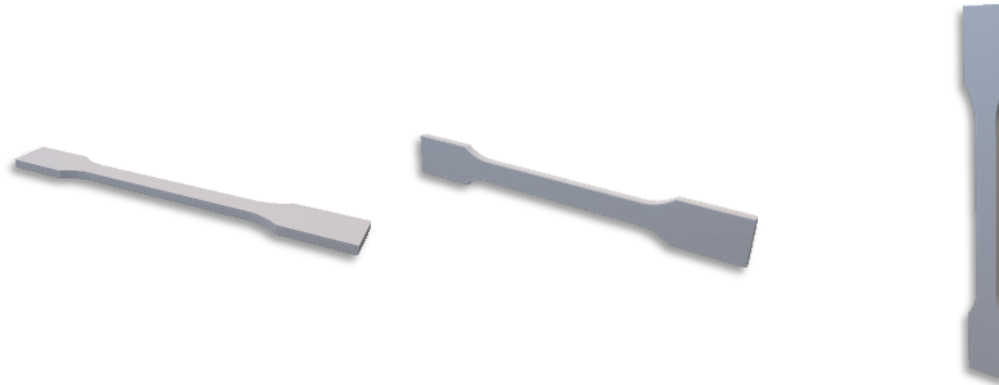
Please check your print profile availability for an easy start at www.forward-am.com.

General Properties		Standard
Bulk density	900 ± 50 kg/m ³	ISO 1183-1
Viscosity	0.65 – 0.75 gl/g	ISO 1133

Thermal Properties*		Standard
HDT at 1.8 MPa	69 °C / 156.2 °F	ISO 75-2
HDT at 0.45 MPa	73°C / 163.4 °F	ISO 75-2
Vicat softening point @ 50 N	75 °C / 167 °F	ISO 306
Vicat softening point @ 10 N	80 °C / 176 °F	ISO 306
Glass Transition Temperature	83 °C / 181.4 °F	ISO 11357-2
Melt Volume Rate	15.1 cm ³ /10 min / 0.9 in ³ /10 min (220 °C, 5 kg)	ISO 1133

*measured on filament printed sampled

Mechanical Properties*¹



Print direction	Standard	XY Flat	XZ On its edge	ZX Upright
Tensile strength ²	ISO 527	38.6 MPa / 2.4 ksi	-	14.7 MPa / 0.9 ksi
Elongation at Break ²	ISO 527	4.3 %	-	1.2 %
Young's Modulus ³	ISO 527	1640 MPa / 100 ksi	-	1334 MPa / 81.4 ksi
Flexural Strength ⁴	ISO 178	66.9 MPa / 4.1 ksi	65.4 MPa / 4.0 ksi	30.2 MPa / 1.8 ksi
Flexural Modulus ⁴	ISO 178	1662 MPa / 101 ksi	1551 MPa / 97.6 ksi	829 MPa / 50.6 ksi
Flexural Elongation at Break ⁴	ISO 178	5.5 %	4.8 %	3.0 %
Impact Strength Charpy (notched)	ISO 179-2	4.0 kJ/m ²	2.0 kJ/m ²	1.0 kJ/m ²
Impact Strength Charpy (unnotched)	ISO 179-2	55.5 kJ/m ²	33.7 kJ/m ²	3.3 kJ/m ²
Impact Strength Izod (notched)	ISO 180	4.4 kJ/m ²	3.3 kJ/m ²	1.5 kJ/m ²
Impact Strength Izod (unnotched)	ISO 180	48.2 kJ/m ²	21.9 kJ/m ²	4.4 kJ/m ²

*measured on filament

¹Conditioning of the specimens: Standard climate (23°C, 50% RH 72h)

²testing speed: 5 mm/min

³testing speed: 1 mm/min

⁴testing speed: 2 mm/min