



## Ultrafuse<sup>®</sup> Pellets rPETG

Optical Appearance | Easy to print | Recycled

### Extended TDS

Complete Technical Documentation and  
Testing Summary

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| Are you looking for an updated TDS version? <a href="#">Check out the latest online version here.</a> |   |

# Technical Data Sheet

**PET is mainly known by the well-known PET bottle material. This recycled PETG grade is based on traceable post industrial PET-G waste.**

## Pellet Properties

|                  |                                  |
|------------------|----------------------------------|
| Pellet Diameter  | Approx. 2mm                      |
| Pellet Length    | Approx. 3mm                      |
| Pellet Size      | 1 ± 0.25g                        |
| Pellet Shape     | Cylindrical, cold cut            |
| Available colors | Natural, Translucent Blue, Black |

## Packaging

Available in 1 mt big bag

## 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 |

## Drying Recommendations

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

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

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

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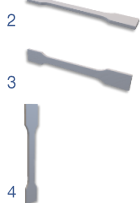
Process materials in a well-ventilated room, or use professional extraction systems.

| General Properties | Standard   | Average Values             |
|--------------------|------------|----------------------------|
| Bulk density       | ISO 1183-1 | 900 ± 50 kg/m <sup>3</sup> |
| Viscosity          | ISO 1133   | 0.65-0.75 gl/g             |

| Tensile Properties <sup>1)</sup>                                   | Standard | Average Values             |                            |                            |
|--------------------------------------------------------------------|----------|----------------------------|----------------------------|----------------------------|
|                                                                    |          | XY-Direction <sup>2)</sup> | XZ-Direction <sup>3)</sup> | ZX-Direction <sup>4)</sup> |
| Tensile strength <sup>5)</sup>                                     | ISO 527  | 38.6 MPa                   | -                          | 14.7 MPa                   |
| Elongation at Break <sup>Fehler! T extmarke nicht definiert.</sup> | ISO 527  | 4.3 %                      | -                          | 1.2 %                      |
| Young's Modulus <sup>6)</sup>                                      | ISO 527  | 1640 MPa                   | -                          | 1334 MPa                   |

| Flexural Properties <sup>1) 7)</sup> | Standard | Average Values |              |              |
|--------------------------------------|----------|----------------|--------------|--------------|
|                                      |          | XY-Direction   | XZ-Direction | ZX-Direction |
| Flexural Strength                    | ISO 178  | 66.9 MPa       | 65.4 MPa     | 30.2 MPa     |
| Flexural Modulus                     | ISO 178  | 1662 MPa       | 1551 MPa     | 829 MPa      |
| Flexural Elongation at Break         | ISO 178  | 5.5 %          | 4.8 %        | 3.0 %        |

<sup>1</sup> Samples were conditioned in standard climate (23°C, 50% RH 72h)



<sup>5</sup> Testing speed: 5 mm/min

<sup>6</sup> Testing speed: 1 mm/min

<sup>7</sup> Testing speed: 2 mm/min

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| Impact Properties <sup>6)</sup>    | Standard  | Average Values         |                        |                       |
|------------------------------------|-----------|------------------------|------------------------|-----------------------|
|                                    |           | XY-Direction           | XZ-Direction           | ZX-Direction          |
| Impact Strength Charpy (notched)   | ISO 179-2 | 4.0 kJ/m <sup>2</sup>  | 2.0 kJ/m <sup>2</sup>  | 1.0 kJ/m <sup>2</sup> |
| Impact Strength Charpy (unnotched) | ISO 179-2 | 55.5 kJ/m <sup>2</sup> | 33.7 kJ/m <sup>2</sup> | 3.3 kJ/m <sup>2</sup> |
| Impact Strength Izod (notched)     | ISO 180   | 4.4 kJ/m <sup>2</sup>  | 3.3 kJ/m <sup>2</sup>  | 1.5 kJ/m <sup>2</sup> |
| Impact Strength Izod (unnotched)   | ISO 180   | 48.2 kJ/m <sup>2</sup> | 21.9 kJ/m <sup>2</sup> | 4.4 kJ/m <sup>2</sup> |

| Thermal Properties <sup>6)</sup> | Standard    | Average Values                              |
|----------------------------------|-------------|---------------------------------------------|
| HDT A at 1.8 MPa                 | ISO 75-2    | 69 °C                                       |
| HDT B at 0.45 MPa                | ISO 75-2    | 73 °C                                       |
| Vicat softening point at 50 N    | ISO 306     | 75 °C                                       |
| Vicat softening point at 10 N    | ISO 306     | 80 °C                                       |
| Glass Transition Temperature     | ISO 11357-2 | 83 °C                                       |
| Melt Volume-Flow Rate (MVR)      | ISO 1133    | 15.1 cm <sup>3</sup> /10 min (220 °C, 5 kg) |

| Certification                    | Standard                                                                               |
|----------------------------------|----------------------------------------------------------------------------------------|
| Food Contact Certification (FCC) | The used raw materials comply with food contact regulations of the European Parliament |

For the statement on FCC data see Chapter [Food Contact Certification](#).

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Process materials in a well-ventilated room, or use professional extraction systems.

# Food Contact Certification



## Food Contact Certificate

## Ultrafuse Pellets rPETG (natural/translucent blue/black)

Date: July 26th, 2024

Version no.: 1.0

Dear customer,

We can confirm that our raw material suppliers certified that Ultrafuse Pellets rPETG (natural / translucent blue type/black) can be used to manufacture (Food Grade) thermoformed packaging. The temperature range for processing the materials is the same temperature as used for regular virgin PET-G. During production no additives other than materials that are in full compliance with the Regulation (EC) No 10/2011 and amendments are being used. The production Process is under control of a quality assurance system as stated in Regulation (EC) No 2023/2006.

Since Forward AM Technologies Netherlands B.V. is not the manufacturer of the final (3D printed) product, the responsibility to test if the final product complies with national and international legislation rests with the user of the filament.

This product information was generated electronically and is valid without signature.

*This document expires upon any regulatory change. Please request new confirmation if needed.*

*This information is believed to be accurate and refers to the laws, regulations, and products at the date of issue. However, Forward AM Technologies Netherlands BV makes no express or implied representations or warranties with respect to the information contained herein. It is the sole responsibility of our customers to determine that their use of Forward AM Technologies Netherlands BV products is safe, lawful, and technically suitable for their applications. Because of possible changes in the laws and regulations, we cannot guarantee that the status of this product will remain unchanged.*

**Forward AM Technologies  
Netherlands BV**

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# Recycled Content Declaration

## ISO 14021 Recycled Content Declaration

## Ultrafuse Pellets rPETG (various colors)

Date: June 14<sup>th</sup>, 2024

Version no.: 1.0

**Contact:**

BASF 3D Printing Solutions B.V.  
Eerste Bokslootweg 17  
7821 AT Emmen, The Netherlands  
[sales@basf-3dps.com](mailto:sales@basf-3dps.com)  
[www.forward-am.com](http://www.forward-am.com)

Dear customer,

As part of our commitment to environmental responsibility we adhere to ISO 14021. This Recycled Content Declaration Form aims to provide a clear and transparent information about the material composition and recycled content of the Ultrafuse® Pellets rPETG, as well as the type of recycled material utilized.

| Product                  | Colors                           | Material Composition | Recycled Material | Virgin Additive, colour additive | Recycled Material Type    |
|--------------------------|----------------------------------|----------------------|-------------------|----------------------------------|---------------------------|
| Ultrafuse® Pellets rPETG | natural, light blue <sup>1</sup> | 100% rPETG           | >99% <sup>2</sup> | -                                | Pre-consumer <sup>3</sup> |
| Ultrafuse® Pellets rPETG | black                            | 100% rPETG           | ±98% <sup>2</sup> | Max 2,5 %                        | Pre-consumer <sup>3</sup> |

<sup>1</sup>Please note that a slight shift in appearance can occur for this recycled PETG (Ultrafuse® Pellets rPET) with a natural blue color. As this product is manufactured out of 99-100% recycled materials, based on our efforts to produce a low product carbon footprint, no substances are added to stabilize the color resulting in the possibility that a shade shift can occur.

<sup>2</sup>Recycled material is material that has been reprocessed from recovered [reclaimed] material by means of a manufacturing process and made into a final product or into a component for incorporation into a product.

<sup>3</sup>Pre-consumer material, is material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it. Pre-consumer is also known as post-industrial.

Recycled and biobased content can vary due to new guidelines, operating conditions, suppliers, and material availability.

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