

Description:

Filament made of NonOilen® material developed for processing by 3D printing with engineering properties and good biodegradability.

One of the main advantages of this material is great temperature resistance after 3D printing, there is no need for annealing! Furthermore, it has high toughness, hardness, barrier properties, easy 3D printing. It is resistant for a long time and it may be used repeatedly. If the object is damaged, the material may be recycled several times with retention of features.

This material has improved biodegradability when compared with standard PLA. NonOilen® waste can be easily placed into the compost where it decomposes faster to biomass, water, and carbon dioxide which are useful for the nature.

The surface is very smooth with natural silk look, translucent in a thin layer. Low fumes are released while processing Fillamentum NonOilen® under recommended conditions.

It is recommended to try the chemical resistance against a specific substance on a small printed object.

This material can be used for production of electrical and electronic equipment. It doesn't contain the restricted substances. The filament complies with the requirements for food-contact applications.

Fillamentum guarantees high precision of filament dimensions within the tolerance +/- 0.05 mm. During the production, the filament is produced with the best stability of the diameter, roundness, and colour.

| Physical properties | Typical Value | Test Method | Test Condition |
|---------------------|-----------------------------------|-------------|-----------------|
| Material density | 1.20 g/cm ³ | ISO 1183 | |
| | 1.05 g/cm ³ | ISO 1133 | |
| Melt flow rate | 5.8 g/10 min | ISO 1133 | 180 °C, 2.16 kg |
| | 12.6 g/10 min | ISO 1133 | 190 °C, 2.16 kg |
| Diameter tolerance | ± 0.05 mm | | |
| Weight | 750 g of filament (+ 210 g spool) | | |

| Mechanical properties | Typical Value | Test Method | Test Condition |
|------------------------|------------------------|-------------|------------------|
| Tensile strength | 38.6 MPa | ISO 527 | at yield |
| | 31.2 MPa | ISO 527 | at break |
| Elongation at break | 7.7 % | ISO 527 | |
| Tensile modulus | 1900 MPa | ISO 527 | |
| Charpy impact strength | 25.6 kJ/m ² | ISO 179 | 23 °C, unnotched |
| | 2.4 kJ/m ² | ISO 179 | 23 °C, notched |
| Hardness | 71 Shore D | ISO 868 | |

| Thermal properties | Typical Value | Test Method | Test Condition |
|-----------------------------|---------------|-------------|-------------------------|
| Heat distortion temperature | 119 °C | ISO 75 | 0.45 MPa |
| Vicat softening temperature | 150 °C | ISO 306 | method A, 10 N, 50 °C/h |

| Chemical properties | Typical Value | Test Condition |
|---------------------|---|----------------|
| Polymer base | polylactic acid and polyhydroxy butyrate compound | |

| Printing properties | Recommended | Notes |
|----------------------|-----------------|---|
| Print temperature | 175-195 °C | Recommended settings! |
| Hot pad | 0-50 °C | It may differ according to the printer and the object. Try your own settings before printing. |
| Bed adhesive | PVA glue, 3dlac | |
| Conditions to re-dry | 65 °C, 2 hours | |

Workability of 3D printing filament is at least 12 months from delivery.

The information was processed with the best knowledge of the manufacturer and it is for information only.