



Kimya PLA-HI 3D Filament

The Kimya **PLA-HI** 3D filament is a biosourced polymer obtained from corn starch. Polylactic Acid -HI (**PLA-HI**) is a "High Impact" filament offering increased impact resistance: it was formulated to be four times more resistant to impact than standard PLA. PLA is easy to print and is odorless. It can be used to create functional prototypes, spare parts, architectural models and in other forms of modeling. The Kimya PLA-HI 3D filament has the following properties:

- Easy to print
- Impact resistance
- Odorless
- Biosourced material
- Food contact under **EU10/2011**
- Complies with the **REACH standard**

2-year KIMYA warranty.

FILAMENT PROPERTIES

| PROPERTIES | TEST METHODS | VALUES |
|---|---------------------------------------|--------------------------------|
| Diameter | INS-6712 | 1.75 ± 0.1 mm 2.85 ± 0.1 mm |
| Density | ISO 1183-1 | 1.21 g/cm ³ |
| Moisture rate | INS-6711 | < 0.5 % |
| Melt flow index (MFI) | ISO 1133-1 (@210°C – 2,16 kg) | 5.7 g/10min |
| Glass transition temperature (T_g) | ISO 11357-1 DSC (10°C/min - 20-300°C) | 107 °C |
| Melting Temperature (T_m) | ISO 11357-1 DSC (10°C/min – 20-220°C) | 156 °C |

PRINT PARAMETERS AND SPECIMENS DIMENSIONS

| | |
|---------------------------|--------------------|
| PRINTING DIRECTION | XY |
| Printing Speed | 40-150 mm/s |
| Infill | 100% - rectilinear |
| Infill Angle | 45°/-45° |
| Nozzle Temperature | 190-210°C |
| Bed T° | 20-60°C |

PRINTED SPECIMENS PROPERTIES

| | PROPERTIES | TEST METHODS | VALUES |
|------------------------------|---|-----------------|------------------------|
| MECHANICAL PROPERTIES | Tensile modulus | ISO 527-2/5A/50 | 2,491 MPa |
| | Tensile Strength | ISO 527-2/5A/50 | 43 MPa |
| | Tensile strain at strength | ISO 527-2/5A/50 | 2 % |
| | Tensile Stress at Break | ISO 527-2/5A/50 | 22.9 MPa |
| | Tensile strain at break (type A) | ISO 527-2/5A/50 | 4.2 % |
| | Flexural modulus | ISO 178 | 2,097 MPa |
| | Deformation at Flexural Strain | ISO 178 | >5 % |
| | Flexural stress at conventional deflection (3,5% strain)* | ISO 178 | 62.8 MPa |
| | Charpy impact resistance | ISO 179-1/1eA | 16.5 kJ/m ² |
| | Shore Hardness | ISO 868 | 76,8D |
| Note 1 | *According to ISO 178, end of the test at 5% deformation even if there is no specimen break. | | |
| Note 2 | The data should be considered as indicative values - Properties can be influenced by production conditions. | | |

Created on 15/01/2018 - Revised on 04/03/2022.