

TECHNICAL DATA SHEET

KEXCELLED PLA K5T

| | | | |
|----------------------|-------------------------|-----------------------|-----------------|
| Product code: | Revision Number: | Revision date: | TDS No.: |
| PLA K5T | 02 | 2/04/2020 | KT04.012.0125 |

CHARACTERISTIC

Environmentally friendly | good interlayer bond | no buckling deformation | high transparency.

IDENTIFICATION OF THE MATERIAL

| | |
|----------------------|-----------------|
| Trade name | PLA K5T |
| Chemical name | Polylactic Acid |
| Use | 3D printing |
| Origin | KEXCELLED |

GUIDELINE FOR PRINT SETTINGS

| | |
|---------------------------|-------------------------|
| Nozzle temperature | 210±10°C |
| Bed temperature | 30~60°C |
| Bed modification | Tape or glue below 60°C |
| Active cooling fan | ON, 100% |
| Layer height | 0.2mm |
| Shell thickness | ≥0.8mm |
| Print speed | 40-80mm/s |

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

| | | Test Method |
|---|-----------------------------|--------------------|
| Melt temperature | ~160 °C | ISO 11357 |
| Glass transition temperature | ~60 °C | ISO 11357 |
| Melt flow rate (MFR)¹ | 7~10 g/10min | ISO 1133 |
| Heat deflection temperature(HDT)² | 55 °C | ISO 75 |
| Vicat softening temperature(VST)³ | 57 °C | ISO 306 |
| density | 1.24~1.26 g/cm ³ | ISO 1183 |
| Odor | Odorless | / |
| Solubility | Insoluble in water | / |

1. test conditions: T= 190°C; m=2.16 kg.

2. test conditions:0.45MPa;120°C/h.

3. test conditions:10N; 120°C/h.

MECHANICAL PROPERTIES|TENSILE TEST
Test Method ISO 527

All test specimens were printed using an FlashForge Guider 2s under the following conditions:

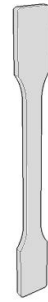
Printing temperature: 205°C

Heated bed temperature: 50°C

Print speed: 50mm/s

Shell thickness: 0.8mm

Infill under 45°



Printed horizontal

Printed Vertical Z-axis

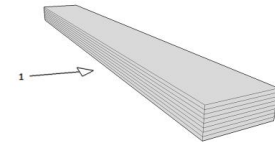
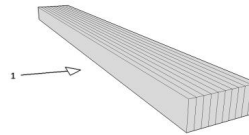
X,Y-axis

| | 50% | 100% | 50% | 100% |
|-------------------------|-------|-------|-------|-------|
| Infill | 50% | 100% | 50% | 100% |
| Tensile strength (Mpa) | 34~36 | 38~40 | 36~40 | 50~55 |
| Elongation at break (%) | 4~6 | 4~6 | 4~6 | 8~10 |

MECHANICAL PROPERTIES|IMPACT TEST
Test Method ISO 179

The same conditions as tensile test.

1→impact direction

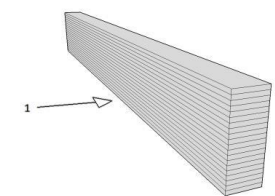
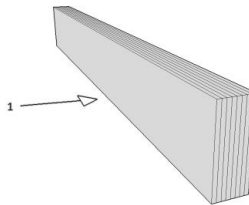


| | 50% | 100% | 50% | 100% |
|---|-------|-------|-------|-------|
| Infill | 50% | 100% | 50% | 100% |
| Impact strength (KJ/m ²) | 16~18 | 22~26 | 15~18 | 20~24 |
| Notch impact strength ¹ (KJ/m ²) | 1~2 | 2~4 | 2~4 | 4~6 |

MECHANICAL PROPERTIES |FLEXURAL TEST
Test Method ISO 178

The same conditions as tensile test.

1→bending direction



| | 50% | 100% | 50% | 100% |
|------------------------|-----------|-----------|-----------|-----------|
| Infill | 50% | 100% | 50% | 100% |
| Maximum force (Mpa) | 90~95 | 95~100 | 90~95 | 100~110 |
| Flexural modulus (Mpa) | 3000~3200 | 3200~3400 | 3000~3200 | 3200~3400 |

1.notch type: type A

| FILAMENT SPECIFICATION | | Test Method |
|--------------------------------|-------------|-------------|
| Diameter 1.75mm | 1.75±0.03mm | EX1125 |
| Diameter 2.85mm | 2.85±0.03mm | EX1125 |
| Diameter 3.00mm | 3.00±0.03mm | EX1125 |
| Max roundness deviation (1.75) | 0.03mm | EX1125 |
| Max roundness deviation (2.85) | 0.03mm | EX1125 |
| Max roundness deviation (3.00) | 0.03mm | EX1125 |
| Net weight on reel | 1kg | EX1125 |