TECHNICAL DATA SHEET

KEXCELLED THE K5™ TEA

Product code:	Revision Number:	Revision date:	TDS No.:
THE K5™ TEA	01	24/12/2025	KT113

Characteristic:

Environmentally friendly| Biomass|Low carbon|KSF Beverage collaboration.

IDENTFICATION OF THE MATERIAL	
Trade name	THE K5™ TEA
Chemical name	Polylactic Acid
Use	3D Printing
Origin	KEXCELLED

GUIDELINE FOR PRINT SETTINGS	
Nozzle temperature	190~230℃
Bed temperature	35~55℃
Bed modification	PEI frosted board
Active cooling fan	ON,50%~100%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	≤260mm/s

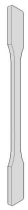
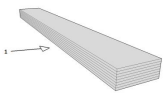
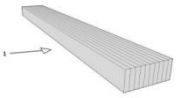
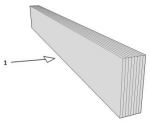
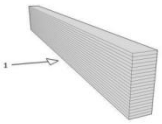
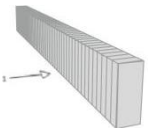
Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES		Test Method
Melt temperature	~165℃	ISO 11357
Glass transition temperature	~60℃	ISO 11357
Melt flow rate (MFR) [1]	2~8g/10min	ISO 1133
Heat deflection temperature(HDT) [2]	50-60℃	ISO 75
Vicat softening temperature(VST) [3]	60-65℃	ISO 306
density	1.4-1.45g/cm^3	ISO 1183
Odor	TEA	/
Solubility	Insoluble in water	/

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

2. test conditions:0.45MPa;120℃/h.

3. test conditions:10N; 120℃/h.

MECHANICAL PROPERTIES|TENSILE TEST			**Test Method ISO 527**
All test specimens were printed using a BambuLab X1C under the following conditions： Printing temperature: 220℃ Heated bed temperature：55℃ Print speed：262.5mm/s Shell thickness：1.2mm Infill under 45°			
	Printed horizontal X,Y-axis	Printed horizontal X,Z-axis	Printed horizontal Z,X-axis[1,2]
Infill	100%	100%	100%
Tensile strength（Mpa）	28~33	35~45	10~15
Elongation at break（%）	3~5	2~5	1~5
Emodulus（Mpa）	1800~2200	2700~2900	1500~2000
MECHANICAL PROPERTIES|IMPACT TEST			**Test Method ISO 179**
The same conditions as tensile test. 1→impact direction			
Infill	100%	100%	100%
Impact strength（KJ/m^2）	12~20	15~20	3~8
Notch impact strength[3]（KJ/m^2）	4~10	4~8	1~3
MECHANICAL PROPERTIES |FLEXURAL TEST			**Test Method ISO 178**
The same conditions as tensile test. 1→bending direction			
Infill	100%	100%	100%
Maximum force（Mpa）	60~70	65~75	23~28
Flexural modulus（Mpa）	2800~3300	3000~3500	1700~2100

1. Z,X-axis test data are for reference only
2. the stress range of the Z,X-axis modulus：10~20MPa
3. notch type: type A

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