

## TECHNICAL DATA SHEET

### KEXCELLED ABS K5

<b>Product code:</b>	<b>Revision Number:</b>	<b>Revision date:</b>	<b>TDS No.:</b>
ABS K5	02	2/04/2020	KT04.012.0127

#### Characteristic:

Excellent toughness | lower odor | lower shrinkage | lower print temperature

#### IDENTIFICATION OF THE MATERIAL

<b>Trade name</b>	ABS K5
<b>Chemical name</b>	Acrylonitrile-butadiene-styrene terpolymer
<b>Use</b>	3D Printing
<b>Origin</b>	KEXCELLED

#### GUIDELINE FOR PRINT SETTINGS

<b>Nozzle temperature</b>	220~250°C
<b>Bed temperature</b>	80~100°C
<b>Bed modification</b>	Tape or glue
<b>Active cooling fan</b>	OFF
<b>Layer height</b>	0.2mm
<b>Shell thickness</b>	≥0.8mm
<b>Print speed</b>	40-80mm/s

Settings are based on a 0.4mm nozzle.

#### MATERIAL PROPERTIES

		Test Method
<b>Melt temperature</b>	~180°C	ISO 11357
<b>Melt flow rate (MFR)<sup>1</sup></b>	30~35 g/10min	ISO 1133
<b>Heat deflection temperature(HDT)<sup>2</sup></b>	85 °C	ISO 75
<b>Vicat softening temperature(VST)<sup>3</sup></b>	95 °C	ISO 306
<b>density</b>	1.05 g/cm <sup>3</sup>	ISO 1183
<b>Odor</b>	Low odor	/
<b>Solubility</b>	Insoluble in water	/

1. test conditions: T= 220 °C; m= 10kg.

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: 240°C

Heated bed temperature: 90°C

Print speed: 45mm/s

Shell thickness: 0.8mm

Infill under 45°



Printed Vertical Z-axis

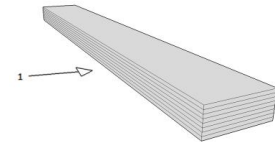
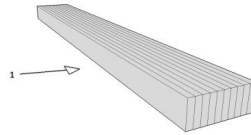
Printed horizontal X,Y-axis

Infill	50%	100%	50%	100%
Tensile strength (Mpa)	18~20	28~30	22~26	40~42
Elongation at break (%)	4~6	4~6	6~8	10~12

**MECHANICAL PROPERTIES|IMPACT TEST**
**Test Method ISO 179**

The same conditions as tensile test.

1→impact direction

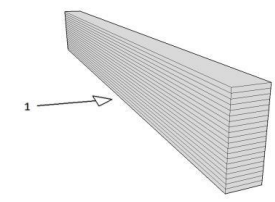
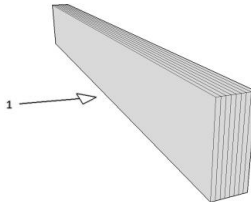


Infill	50%	100%	50%	100%
Impact strength (KJ/m <sup>2</sup> )	18~20	38~42	24~28	38~42
Notch impact strength <sup>1</sup> (KJ/m <sup>2</sup> )	10~12	20~24	8~10	18~22

**MECHANICAL PROPERTIES |FLEXURAL TEST**
**Test Method ISO 178**

The same conditions as tensile test.

1→bending direction



Infill	50%	100%	50%	100%
Maximum force (Mpa)	50~55	75~80	50~55	75~80
Flexural modulus (Mpa)	2000~2200	2600~2800	2100~2300	2600~2800

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