

## Technical data sheet- POM 3D filament

Printing features	Settings
<b>Extrusion temperature</b>	Between 230 and 250°C
<b>Bed temperature</b>	Between 90° and 110°
<b>Bed type</b>	POM plate
<b>Bed surface treatment</b>	Sanding grain (100)
<b>Chamber temperature</b>	≈ 50°C
<b>Ventilation</b>	25%/increase possible after first layers
<b>Printing speed</b>	Approximately 30 mm/sec
<b>Shrinkage speed</b>	36 mm/sec
<b>Shrinkage distance</b>	0.8 mm
<b>Min. 3D printing skills</b>	Experienced to professional

### Recommendations :

- Printers must have an enclosed chamber, but not necessarily heated.
- For use and handling in a well-ventilated room

### **THESE VALUES ARE INDICATIVE AND MAY VARY**

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Physical properties	Value	Unit	Test Standard
Density	1410	kg/m <sup>3</sup>	ISO 1183
Melt flow rate, MFR	2,9	g/10min	ISO 1133
MFR temperature	190	°C	ISO 1133
MFR load	2,16	kg	ISO 1133
Melt volume rate, MVR	2,5	cm <sup>3</sup> /10min	ISO 1133
MVR temperature	190	°C	ISO 1133
MVR load	2,16	kg	ISO 1133
Humidity absorption, 23°C/50%RH	0,2	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	2400	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	61	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	11	%	ISO 527-2/1A
Flexural modulus, 23°C	2400	MPa	ISO 178
Charpy impact strength, 23°C	250 <sup>P1</sup>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	250	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	8,5	kJ/m <sup>2</sup>	ISO 179/1eA

P: Partial Break

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	163	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	91	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	160	°C	ISO 306
Coeff. of linear therm expansion, parallel	1,1	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	1	E-4/°C	ISO 11359-2

Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	9988-2	-	Internal
Injection Molding, melt temperature	205	°C	ISO 294
Injection Molding, mold temperature	≥90	°C	ISO 294
Injection Molding, injection velocity	140	mm/s	ISO 294
Injection Molding, pressure at hold	86	MPa	ISO 294

#### Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Drying time	3 - 4	h	-
Drying temperature	100 - 120	°C	-
Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 30	°C	-
Feeding zone temperature	60 - 80	°C	-
Zone1 temperature	170 - 180	°C	-
Zone2 temperature	180 - 190	°C	-
Zone3 temperature	190 - 200	°C	-
Zone4 temperature	190 - 210	°C	-
Die temperature	190 - 210	°C	-
Melt temperature	190 - 210	°C	-
Cavity temperature	80 - 120	°C	-
Hot runner temperature	190 - 210	°C	-
Pressure	Value	Unit	Test Standard
Back pressure max.	40	bar	-
Speed	Value	Unit	Test Standard
Injection speed	slow	-	-