

## TPLA@df

TPLA @df is a tough, easy to use high grade colour changing PLA type of filament. The dark grey colour will change to natural above 29°C, but much faster above 33°C or higher. Other features are according our slightly modified PLA @df product, so tougher and less brittle as a regular PLA. Due to a low shrinkage factor PLA @df will not deform after cooling. Poly Lactic Acid is a biodegradable plastic made from renewable natural resources and one of the most popular materials for 3D printing.

### Features:

- Colour changing grey-natural > 33° Celsius
- Tougher and less brittle compared to regular PLA
- Easy to print at low temperature
- Low warping
- Biodegradable
- Limited smell



### Colours:

TPLA @df is available from stock in thermochrome dark grey. For other non stock thermochrome colours please ask our team



### Packaging:

TPLA @df is available in nearly any type of packaging and labelling. Ask our team to help you customizing your product.

### Additional info:

Due to its low tendency to warp TPLA @df can also be printed without a heated bed. If you have a heated bed the recommended temperature is  $\pm 35-60^{\circ}\text{C}$ .

TPLA @df can be used on all common desktop FDM or FFF technology 3D printers.

Storage: Cool and dry ( $15-25^{\circ}\text{C}$ ) and away from UV light. This enhances the shelf life significantly.

### Dimensions

Size	Ø tolerance	Roundness
1,75mm	$\pm 0,05\text{mm}$	$\geq 95\%$
2,85mm	$\pm 0,10\text{mm}$	$\geq 95\%$

### Physical properties

Description	Testmethod	Typical value
Specific gravity	ASTM D1505	1,24 g/cc
MFI	-	6,0 g/10 min
Tensile strength	ASTM D882	110 MPa (MD) 145 MPa (TD)
Elongation at break	ASTM D882	160% (MD) 100% (TD)
Tensile modulus	ASTM D882	3310 MPa (MD) 3860 Mpa (TD)
Impact Strength	-	7,5 KJ/m <sup>2</sup>

### Thermal properties

Description	Testmethod	Typical value
printing temp.	-	180-210°C
melting temp.	-	210°C $\pm 10^{\circ}\text{C}$
melting point	ASTM D3418	145-160°C
vicat softening temp.	ISO 306	$\pm 60^{\circ}\text{C}$