

# Liquid Crystal Polymer (LCP)

## General

LCP have good melt flowability, flame retardancy, dimensional stability at high temperatures, chemical resistance and low thermal expansion as well as good mechanical properties. The long-term heat resistance is over 190 ° C.

LCP are very resistant to weak acids and bases, alcohols, aromatics, chlorinated hydrocarbons, esters, ketones and all chemicals that can cause stress cracks in most other plastics.

The UV resistance is very good and printed parts made of LCP are therefore also suitable for outdoor use.

Liquid crystal polymer is inherently flame retardant and therefore does not have to be additionally mixed with additives.

Parts that are printed from LCP have a strong anisotropy. The layer adhesion is not particularly good as a result. Due to the low shrinkage, which is almost 0%, the material is also very suitable for producing large, warp-free objects.

### advantageous

- high temperature resistance up to over 190 ° C
- practically no loss
- non-flammable (V0)
- good weather stability

### disadvantageous

- Poor layer adhesion
- high price
- high density

## Processing data

### Printing temperature

280-300 °C

### Heated bed temperature

120-150 °C

### Drying temperature

150 °C

### Drying time

4-6 h

## Technical specifications

<b>Shrinkage (ISO 294-4)</b>	0.0	%
<b>MFR</b>	-	g/10min
<b>Yield stress (ISO 527-2/1A)</b>	200	MPa
<b>Elongation at yield (ISO 527-2/1A)</b>	3.1	%
<b>Elongation at break (ISO 527-2/1A)</b>	3.1	%
<b>Tensile modulus (ISO 527-2/1A)</b>	11700	MPa
<b>Heat deflection temperature 1.8 MPa (ISO 75-1/-2)</b>	193	°C
<b>Vicat softening temperature B50 (50°C/h 50N) (ISO 306)</b>	145	°C
<b>Thermal conductivity 23°C</b>	-	W/(K*m)
<b>Flammability (UL 94)</b>	V0	
<b>Density (ISO 1183)</b>	1.40	g/cm <sup>3</sup>