

Cyclo-Olefin-Copolymer (COC)

General

COC is a polyolefin which, unlike the semi-crystalline olefins PP or PE, is amorphous and therefore transparent. This makes COC much easier to process in the FDM process than PP or PE.

Cyclo-olefin polymer has excellent transparency and is therefore often used for optical applications. COC has high hardness, strength and rigidity as well as low density. Its chemical resistance is very good.

Due to its very good biocompatibility, the material is often used in the medical field. The material has very low water absorption and excellent water vapor impermeability.

This filament meets the composition requirements of European Regulation No. 10/2011 on plastic materials for food contact.

advantageous

- high rigidity and hardness
- high transparency
- low water absorption
- no pre-drying required

disadvantageous

- more brittle than PP or PE

Processing data

Printing temperature

260-310 °C

Heated bed temperature

90-110 °C

Drying temperature

Nicht notwendig

Drying time

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Technical specifications

Shrinkage (ISO 294-4)	0.4-0.7	%
MFR (ISO 1133)	4	g/10min
Yield stress (ISO 527-3)	60	MPa
Elongation at yield (ISO 527-3)	3	%
Elongation at break (ISO 527-3)	3	%
Tensile modulus (ISO 527-3)	3000	MPa
Heat deflection temperature 0.45 MPa (ISO 75-1/-2)	150	°C
Vicat softening temperature A B50 (ISO 306)	156	°C
Thermal conductivity 23°C	-	W/(K*m)
Flammability (UL 94)	HB	
Density (ISO 1183)	1.02	g/cm ³