Technical Specification



KCL Formi[™] 3D Nordic Birch

- MaterialCellulose fiber filled biocomposite. Principal ingredients are specially selected cellulose
fibers and native polylactide acid. A 10% fiber content keeps the PLA-based material stable
during 3D printing, while also improving its mechanical and other properties of PLA. Due to
the low fiber content, the mechanical properties in the z-direction remain good. The material
is water-resistant.
- **Applications** This grade is specifically designed for large-scale additive manufacturing. It is recommended for use in furniture, art and decor, in technical applications requiring, for example, rigidity
- **Environment** This material can be recycled or used for energy production. All renewable cellulose fibers come from certified forests.

Grade		PLA 10		
Property	Test method	XY-direction	Z-direction	
Density, g/cm³	EN ISO 1183	1,21	1,21	
Ultimate Tensile strength, Mpa*	ISO 527	46*	22*	
Ultimate Tensile modulus, Mpa*	ISO 527	6650*	3250*	
Peak melt temperature, °C	ISO 11357	135-180	135-180	
Glass transition temperature,°C	ISO 11357	60	60	
Melt flow index (190 °C/10kg)	ISO 1133	33	33	
Fibre content (%)		10	10	

* Printing speed 50 mm/s, Wall 7.2-7.5 mm, measured 10mm/min

- **Colours** Lignin-free fibers allow for more vibrant colors that gradually lighten over time, yet the light shades stay bright. For 3D extrusion, it is advisable to use a PLA-based color masterbatch for coloring
- **Post processing** 3D printed parts can be finished using traditional wood processing techniques such as milling, sawing, sanding, staining, waxing, varnishing, and painting
 - **Pretreatment** The material contains cellulose fibers that can absorb moisture if the package is left open. Keep the package sealed whenever possible. It is recommended to dry the material overnight at 50-55°C, preferably using a dehumidifying dryer
 - **Safety** The maximum recommended processing temperature is 200°C. Overheating can lead to thermal degradation. The product is non-flammable under normal storage, handling, and usage conditions. If a fire occurs due to improper handling or storage, it is best to use polyvalent powder extinguishers (ABC powder) or water, following fire protection regulations
 - **Storage** Granulates should be protected from UV light and stored in sealed packages under dry conditions at temperatures below 50°C. Exposure to air humidity can raise the moisture content of the material, negatively impacting the properties of the final product

All information provided is based on our knowledge and experience. It is intended solely as a guide for the safe handling, use, processing, transport, storage, disposal, and release of the material, and should not be considered a guarantee or quality certification. You must adhere to all applicable rules, regulations, and guidelines when using the material. You are fully responsible for any claims or liabilities arising from your handling, use, processing, transport, storage, disposal, and release of the material