Technical Data Sheet

High Performance Resin – Rigid Ceramic

Print date: 14-12-2021 **Version:** 1.0

Product specifications

FormFutura's High Performance Resin – Rigid Ceramic exhibits phenomenal material stiffness and strength properties. Our Rigid Ceramic resin is reinforced with durable nanoparticle ceramics. This makes it one of the stiffest and strongest materials available on the market. A flexural modules of 9.5 GPa and a maximum flexural strength of 170 MPa can be obtained.
Parts made with Rigid Ceramic Resin feature an impressive resistance to bending. Even when a significant amount of load is being applied to the 3D printed part. Next to this, the material has excellent chemical and heat resistance properties. Rigid Ceramic resin 3D prints with an incredibly high detail resolution and smooth matte finish.

Important key features

- Reinforced with durable nanoparticle ceramics.
- A superb maximum flexural modulus of 9.5 GPa.
- A superb flexural strength up to 170 MPa.
- Compatible with all open-source SLA, DLP, and LCD 3D printers in the range of 385 - 405nm.

Suitable applications

- Rapid industrial-grade prototyping.
- 3D printing short-run injection molds.
- Manufacturing fluid flow components.
- Fabricating electrical casings.
- Manufacturing aerodynamic test models.

Physical properties after post curing

This data provided for those properties are typical values, and should not be construed as sales specifications.

Property	Typical value	Method
Tensile strength	70 - 85 MPa	ASTM D638M
Tensile modulus	8,5 – 9,5 GPa	ASTM D638M
Impact strength (IZOD notched)	18 J/m	ASTM D256A
Shore Hardness	94D	ASTM D2240
Elongation at break	1%	ASTM D638M
Flexural strength	150 - 170 MPa	ASTM D790M
Flexural modulus	8,5 - 9,5 GPa	ASTM D2240
Compression strength	160 MPa	ASTM D695
HDT-A (1,8 MPa)	72,0°C	ISO 75-2
HDT-B (0,45MPa)	86,3°C	ISO 75-2
Density ρ (solid)	1,62 g/cm^3	-
Density ρ (Liquid)	1,52 g/cm^3	-
Water sorption	0,59%	ASTM D570-98

Shrinkage during printing	Typical Value
Linear Shrinkage during printing	<0,1%
Linear Shrinkage during UV-curing	0,5%
Linear Shrinkage during thermal cure	0,1%

Post curing parameters: Specimens are UV cured for 60 minutes at 60°C and thermal cured for 120 minutes at 100°C.

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Storage and handling

Provided proper storage and handling precautions are taken we would expect High Performance Resin – Rigid Ceramic to be technically stable for at least 18 months. For detailed advice on Storage and Handling please refer to the Safety Data Sheet on formfutura.com/downloads.

Product export information

HS Code	Description	Country of origin
29161400	Resin for 3D Printing	Netherlands

Disclaimer