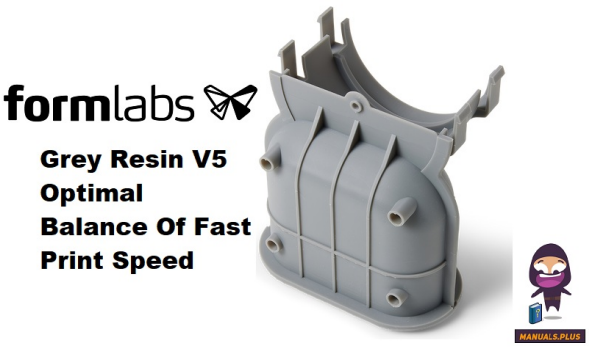

formlabs Grey Resin V5 Optimal Balance Of Fast Print Speed User Guide

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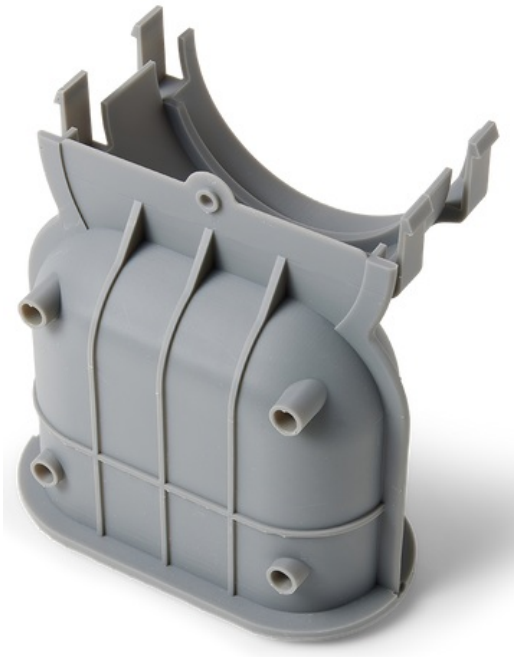

Product Information

General Purpose Resin – Grey Resin V5
An optimally-balanced Grey Resin for versatile applications.
Grey Resin V5 offers a balance of fast print speed, high accuracy,presentation-ready appearance, strong mechanical properties, and an easy, reliable workflow. Create stiff and strong parts with a surface finish that rivals injection molding. The material formulation leverages the Form 4 ecosystem for faster printing.

Material Properties

Property	Metric	Imperial	Method
Ultimate Tensile Strength	62 MPa	8992 psi	ASTM D638-14
Tensile Modulus	2675 MPa	388 ksi	ASTM D638-14

Thermal Properties

- Heat Deflection Temperature @ 1.8 MPa: ASTM D648-16
- Heat Deflection Temperature @ 0.45 MPa: ASTM D648-16

Solvent Compatibility
Percent weight gain over 24 hours for a printed and post-cured 1 x 1 x 1 cm cube immersed in respective solvents:

- Acetic Acid 5%: 0.9%
- Acetone: 4.9%

Product Usage Instructions

Printing Guidelines
Ensure the printer is calibrated and the resin tank is clean before starting the print. Use recommended print settings for optimal results.

Post-Processing
After printing, post-cure the part according to the specified times and conditions for best mechanical properties.

GENERAL PURPOSE RESIN

An optimally-balanced Grey Resin for versatile applications
Grey Resin V5 is an exceptionally versatile General Purpose Resin, offering an optimal balance of fast print speed, high accuracy, presentation-ready appearance, strong mechanical properties,and an easy, reliable workflow.

Create parts that are stiff and strong with a surface finish that rivals injection molding. Grey Resin V5 has a rich, matte color that captures fine features accurately.

Grey Resin V5 is a new material formulation that leverages the Form 4 ecosystem to print three times faster than the previous version.

Form and fit prototyping
Presentation-ready models with fine features and intricate details

General dental models
Jigs and fixtures

Prepared 20/03/2024
Rev. 01 20/03/2024

SPECIFICATION

Material Properties	**METRIC 1**			**IMPERIAL 1**			**METHOD**
	Green	**Post-Cured for 5 min at ambient temperature 2**	**Post-Cured for 15 min at 60 °C 3**	**Green**	**Post-Cured for 5 min at ambient temperature 2**	**Post-Cured for 15 min at 140 °F 3**	
Tensile Properties	**METRIC 1**			**IMPERIAL 1**			**METHOD**
Ultimate Tensile Strength	46 MPa	54 MPa	62 MPa	6672 psi	7832 psi	8992 psi	ASTM D638-14
Tensile Modulus	2200 MPa	2500 MPa	2675 MPa	319 ksi	363 ksi	388 ksi	ASTM D638-14
Elongation at Break	22%	15%	13%	22%	15%	13%	ASTM D638-14
Flexural Properties	**METRIC 1**			**IMPERIAL 1**			**METHOD**
Flexural Strength	82 MPa	91 MPa	103 MPa	11893 psi	13198 psi	14938 psi	ASTM D790-15
Flexural Modulus	2000 MPa	2450 MPa	2750 MPa	290 ksi	355 ksi	399 ksi	ASTM D790-15
Impact Properties	**METRIC 1**			**IMPERIAL 1**			**METHOD**
Notched Izod	36 J/m	34 J/m	32 J/m	0.673 ft-lb/in	0.636 ft-lb/in	0.598 ft-lb/in	ASTM D4812-11
Thermal Properties	**METRIC 1**			**IMPERIAL 1**			**METHOD**
Heat Deflection Temp. @ 1.8 MPa	54 °C	54 °C	59 °C	129 °F	129 °F	138 °F	ASTM D648-16
Heat Deflection Temp. @ 0.45 MPa	62 °C	62 °C	71 °C	144 °F	144 °F	160 °F	ASTM D648-16

SOLVENT COMPATIBILITY

Percent weight gain over 24 hours for a printed and post-cured 1 x 1 x 1 cm cube immersed in respective solvent:

Solvent	24 hr weight gain, %	Solvent	24 hr weight gain, %
Acetic Acid 5%	0.9	Mineral oil (Heavy)	0.2
Acetone	4.9	Mineral oil (Light)	0.2
Bleach ~5% NaOCl	0.7	Salt Water (3.5% NaCl)	0.8
Butyl Acetate	0.3	Skydrol 5	0.5
Diesel Fuel	0.1	Sodium Hydroxide solution (0.025% PH 10)	0.8
Diethyl glycol Monomethyl Ether	1.0	Strong Acid (HCl conc)	0.5
Hydraulic Oil	0.2	Tripropylene glycol monomethyl ether	0.3
Hydrogen peroxide (3%)	0.9	Water	0.8
Isooctane (aka gasoline)	< 0.1	Xylene	< 0.1
Isopropyl Alcohol	0.3		

1. Material properties may vary based on part geometry, print orientation,print settings, temperature, and disinfection or sterilization methods used.
2. Data was obtained from parts printed on a Form 4 printer with 100 µm Grey Resin V5 settings, washed in a Form Wash for 5 minutes in ≥99% Isopropyl Alcohol, and post-cured at room temperature for 5 minutes in a Form Cure.
3. Data was obtained from parts printed on a Form 4 printer with 100 µm Grey Resin V5 settings, washed in a Form Wash for 5 minutes in ≥99% Isopropyl Alcohol, and post-cured at 60°C for 15 minutes in a Form Cure.

Frequently Asked Questions

Q: Can Grey Resin V5 be used for dental models?
A: Yes, Grey Resin V5 is suitable for creating general dental models.

Q: How should I clean printed parts?
A: Clean printed parts using isopropyl alcohol or other compatible cleaning agents recommended by the manufacturer.

Documents / Resources

	formlabs Grey Resin V5 Optimal Balance Of Fast Print Speed [pdf] User Guide V5 FLGPGR05, Grey Resin V5 Optimal Balance Of Fast Print Speed, Grey Resin V5, Optimal Balance Of Fast Print Speed, Fast Print Speed, Print Speed

References

- **User Manual**