

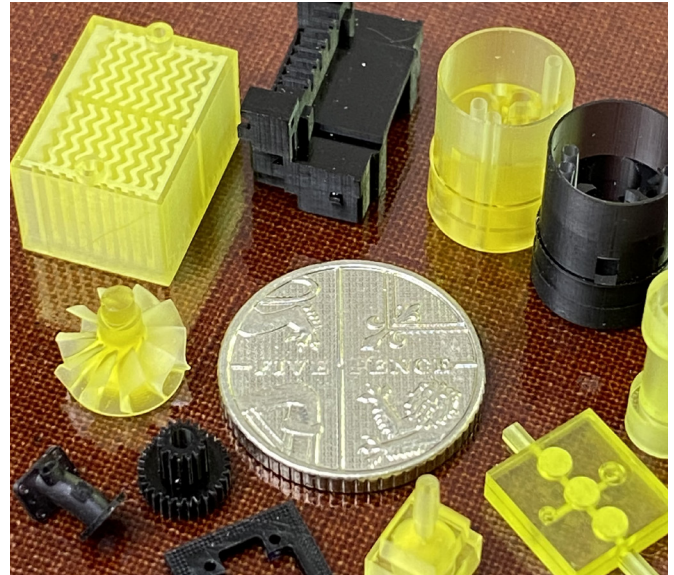
RG Resin

A photopolymer resin used for Projection Micro Stereo Lithography (PμSL) 3D printing

RG photopolymer resin is a durable engineering material which can be used to print functional end-use parts. Its key feature is that it doesn't uptake any water and is suitable for a wide range of applications such as electrical cases, snappers and functional prototyping.

RG has passed the requirements associated with the following ISO 10993 biocompatibility tests.

ISO Standard	Test Description
ISO 10993-5: 2009	In Vitro Cytotoxicity
ISO 10993-11: 2017	Pyrogen Test
ISO 10993-11: 2017	Acute Skin Toxicity Test
ISO 10993-10: 2010	Skin Sensitization Test
ISO 10993-10: 2010; ISO 10993-2: 2006	Skin Irritation Test



Selection of parts in BMF Materials - HTL (black), BIO (yellow), RG (yellow)

		Cured parts	Standard
Tensile Properties	Tensile Strength	60.4 MPa	ASTM D638
	Tensile Modulus	1765 MPa	ASTM D638
	Elongation at Break	11.7%	ASTM D638
Flexural Properties	Flexural Strength	77.7 MPa	ASTM D790
	Flexural Modulus	2.1 GPa	ASTM D790
Thermal Properties	CTE @ 60C	157 μm/m/°C	-
	HDT @ 0.45 MPa	56.5 °C	ASTM D648 - 07
General properties	Contact Angle	45-60°	ASTM D7334
	Water Absorption (24h)	0.77%	ASTM D570
	Dialectic Constant (10 GHz)	2.94	-
	DF	0.0197	-
	Hardness	77 Shore D	ASTM D785
	Viscosity	1100 cP	-
	Standard Colour	Yellow	-
	Cell Culture Survival Rate In Vitro	91.7%	-

¹ Final properties are dependent on print conditions, post-processing operations, and part geometry.

² Test samples were UV cured and heat cured.

Design features for P μ SL

Design feature	Recommended
Maximum part size	100 x 100 x 75 mm
Minimum part size	1 mm ³
Minimum feature size	0.05 mm
Minimum hole diameter (vertical)	0.05 mm
Minimum hole diameter (horizontal)	0.15 mm
Maximum unsupported hole diameter (horizontal)	2.0 mm
Minimum wall thickness (supported)	0.05 mm
Minimum wall thickness (unsupported)	0.1 mm
Minimum unsupported overhang angle	30°
Maximum bridged overhang length	1.5 mm
Maximum non-bridged overhang length	0.3 mm
Aspect ratio for channels	100:01:00
Aspect ratio for pins & pillars	40:01:00
Minimum feature clearance	0.1 mm
Recommended channel shape > Ø 100 µm	Rectangular or circular
Recommended channel shape < Ø 100 µm	Circular
Part-to-part spacing	0.1 mm
Layer height	0.01- 0.05 mm
Support structure shape	Cone
Support structure cone top diameter	0.08 - 0.2 mm
Support structure cone base diameter	0.1mm-1 mm

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