Perfactory® R5 Gray

Acrylic

EnvisionTEC, Inc.

Message:

EnvisionTEC R5 Gray is an accurate and functional resin for producing robust and durable parts on all EnvisionTEC 3D printers. R5 Gray is a liquid, photo-reactive acrylate with a wide processing latitude, which is used to producer parts with high quality up-facing and down-facing surfaces. The parts exhibit superior fatigue strength properties and excellent tolerance to a broad temperature and humidity range during and after build. The material offers distinguished chemical resistance and a good balance of properties between rigidity and functionality. R5 Gray is ideal for creating master patterns in rubber molding applications and is suitable for electrical housings, medical products, snap-fit parts, consumer products, and automotive applications.
Applications
Aerospace, Animation and Entertainment, Architecture and Art, Automotive, Consumer Packaged Goods, Education, Electronics, Manufacturing, Sporting Goods
Recommended Machines:
Perfactory® 4 Standard with ERM, Perfactory® 4 Standard XL with ERM

General Information	
Features	Durable
	Fatigue Resistant
	Good Chemical Resistance
	Good Surface Finish
	Good Thermal Stability
	Humidity Resistant
	Medium Rigidity
Uses	Aerospace Applications
	Automotive Applications
	Consumer Applications
	Electrical/Electronic Applications
	Engineering Parts
	Housings
	Medical/Healthcare Applications
	Modeling Material
	Mold Making
	Patterns
	Prototyping
	Sporting Goods
	Toys
Appearance	Grey
Forms	Liquid
Processing Method	3D Printing, Stereolithography

Physical	Nominal Value	Unit	Test Method
Density	1.22	g/cm³	ISO 1183

Viscosity	643	mPa·s	DIN 1342
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D)	89		ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress	49.7	MPa	ISO 527-2
Tensile Strain			ISO 527-2
Yield	7.9	%	
Break	5.2	%	
Flexural Modulus	1960	MPa	ISO 178
Flexural Stress	79.7	MPa	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact Strength	5.1	kJ/m^2	ISO 180
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	84.5 to 103	°C	
1.8 MPa, Unannealed	65.4 to 88.0	°C	
Glass Transition Temperature	120 to 150	°C	DIN 53765
CLTE - Flow			ASTM E381
-40 to 0°C	5.5E-5 to 6.3E-5	cm/cm/°C	
0 to 50°C	8.8E-5 to 9.4E-5	cm/cm/°C	
50 to 100°C	1.7E-4 to 1.9E-4	cm/cm/°C	
100 to 150°C	1.9E-4 to 2.0E-4	cm/cm/°C	

Recommended distributors for this material

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