

Perfactory® R5

Acrylic
EnvisionTEC, Inc.

Message:

R5 and R11 is a liquid photopolymer that produces robust, accurate, and functional parts. The material offers superior chemical resistance, a wide processing latitude, and excellent tolerance to a broad temperature and humidity range during and after build. Parts created from R5 and R11 exhibit superior fatigue properties, strong memory retention, and high quality up-facing and down-facing surfaces. R5 and R11 also offers a good balance of properties between rigidity and functionality.

Applications
Aerospace, Animation and Entertainment, Architecture and Art, Automotive, Consumer Packaged Goods, Education, Electronics, Manufacturing, Sporting Goods, Toys

Recommended Machines:
Perfactory® 4 Standard with ERM, Perfactory® 4 Standard XL with ERM

General Information			
Features	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		
	Modeling Material		
	Prototyping		
	Sporting Goods		
	Toys		
Appearance	Red		
Forms	Liquid		
Processing Method	3D Printing, Stereolithography		
Physical	Nominal Value	Unit	Test Method
Water Absorption (Equilibrium)	0.78	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	81		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1250 to 1510	MPa	ASTM D638
Tensile Strength	31.0 to 39.0	MPa	ASTM D638
Tensile Elongation			ASTM D638

Yield	16	%	
Break	11 to 25	%	
Flexural Modulus	1190 to 1380	MPa	ASTM D790
Flexural Strength	40.0 to 45.0	MPa	ASTM D790
Films	Nominal Value	Unit	Test Method
Graves Tear	154.3	kN/m	ASTM D1004
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	27 to 50	J/m	ASTM D256A
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	37.0 to 52.0	°C	ASTM E1545
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	

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Recommended distributors for this material

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