

ProtoTherm 12110

Unspecified

DSM Somos®

Message:

DSM's Somos® ProtoTherm 12110 is a liquid photopolymer that produces strong, high-temperature tolerant, water-resistant parts. Parts created with Somos® ProtoTherm 12110 have a cherry-red appearance which turns to an orange-red color after thermal treatment.

Applications

Somos® ProtoTherm 12110 differentiates itself from other high temperature stereolithography materials by increasing in tensile strength and maintaining decent elongation at break after thermal treatment. This makes the material ideal for many applications in the automotive and aerospace markets where strong parts that can resist high temperatures are needed.

General Information			
Features	High Heat Resistance		
	High Strength		
	High Tensile Strength		
	Humidity Resistant		
	Low to No Water Absorption		
Uses	Aerospace Applications		
	Automotive Applications		
	Prototyping		
Appearance	Red		
Forms	Liquid		
Processing Method	3D Printing, Stereolithography		
Physical	Nominal Value	Unit	Test Method
Density	1.15	g/cm³	
Water Absorption (Equilibrium)	0.28	%	ASTM D570
Viscosity (30°C)	410	mPa · s	
Critical Exposure	12.2	mJ/cm²	
Penetration Depth	139.7	µm	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	85		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3430	MPa	ASTM D638
Tensile Strength	57.6	MPa	ASTM D638
Tensile Elongation (Break)	5.0	%	ASTM D638
Flexural Modulus	3350	MPa	ASTM D790
Flexural Strength	108	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	12	J/m	ASTM D256A
Thermal	Nominal Value	Unit	Test Method

Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	52.9	°C	
1.8 MPa, Unannealed	48.0	°C	
Glass Transition Temperature	59.3	°C	ASTM E1545
CLTE - Flow			ASTM E831
-40 to 0°C	5.8E-5	cm/cm/°C	
0 to 50°C	8.6E-5	cm/cm/°C	
50 to 100°C	1.2E-4	cm/cm/°C	
100 to 150°C	1.4E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.54		
1 kHz	3.52		
1 MHz	3.39		

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