

DSM Somos® ProtoCast™ AF 19122 Antimony-free Liquid Photopolymer

Category : Polymer , Rapid Prototyping Polymer

Material Notes:

Product Description DSM Somos® ProtoCast™ AF 19122 is an antimony-free liquid photopolymer specifically formulated for producing investment casting patterns. **Applications** Ideal for use in foundry applications, ProtoCast AF 19122 is totally antimony free, which eliminates the risk of contamination in specialty alloys. Antimony is traditionally present in the photoinitiators that activate the stereolithography chemistry. No other metals are present in the photopolymer chemistry. The absence of antimony also allows stereolithography patterns to burn out more completely, resulting in significantly lower residual ash than is produced by burning out conventional stereolithography patterns. Studies have shown that the residual ash of ProtoCast AF 19122 is less than 0.015% after burnout at 1500°F for two hours. **Key Product Benefits** Very low ash High casting yields Antimony free **Information Provided by DSM Desotech Inc.**

Order this product through the following link:

http://www.lookpolymers.com/polymer_DSM-Somos-ProtoCast-AF-19122-Antimony-free-Liquid-Photopolymer.php

Physical Properties	Metric	English	Comments
Density	1.13 g/cc	0.0408 lb/in ³	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Water Absorption	0.70 %	0.70 %	ASTM D570-98
Viscosity	100 cP	100 cP	
	@Temperature 30.0 °C	@Temperature 86.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	84.3 - 86.1	84.3 - 86.1	ASTM D2240
Tensile Strength at Break	44.5 - 45.3 MPa	6450 - 6570 psi	ASTM D638M
Elongation at Break	5.2 - 7.0 %	5.2 - 7.0 %	ASTM D638M
Tensile Modulus	2.013 - 2.187 GPa	292.0 - 317.2 ksi	ASTM D638M
Flexural Strength	72.9 - 75.7 MPa	10600 - 11000 psi	ASTM D790M
Flexural Modulus	2.135 - 2.265 GPa	309.7 - 328.5 ksi	ASTM D790M
Izod Impact, Notched	0.170 - 0.290 J/cm	0.318 - 0.543 ft-lb/in	ASTM D256A

Thermal Properties	Metric	English	Comments
CTE, linear	74.1 µm/m-°C	41.2 µin/in-°F	ASTM E831-05
	@Temperature -40.0 - 0.000 °C	@Temperature -40.0 - 32.0 °F	
	96.3 µm/m-°C	53.5 µin/in-°F	

Thermal Properties	Metric	English	ASTM E831-05 Comments
	@Temperature 0.000 - 50.0 °C	@Temperature 32.0 - 122 °F	
	141.8 µm/m-°C	78.78 µin/in-°F	
	@Temperature 50.0 - 100 °C	@Temperature 122 - 212 °F	ASTM E831-05
	182 µm/m-°C	101 µin/in-°F	
	@Temperature 100 - 150 °C	@Temperature 212 - 302 °F	ASTM E831-05
Deflection Temperature at 0.46 MPa (66 psi)	59.0 °C	138 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	50.0 °C	122 °F	ASTM D648
Glass Transition Temp, Tg	49.0 °C	120 °F	ASTM E1545-00

Electrical Properties	Metric	English	Comments
	2.94	2.94	
Dielectric Constant	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	ASTM D150-98
	3.12	3.12	
	@Frequency 1000 Hz	@Frequency 1000 Hz	ASTM D150-98
	3.16	3.16	
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	ASTM D150-98
Dielectric Strength	14.53 - 15.24 kV/mm	369.1 - 387.1 kV/in	ASTM D149-97a

Descriptive Properties	Value	Comments
Appearance	Clear Peach	
Dp (mm)	0.107	Slope of cure-depth vs. ln(E) curve
E10 (mJ/cm2)	85	Exposure that gives 0.254mm thickness
Ec (mJ/cm2)	11.5	Critical exposure

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