

DSM Somos® WaterShed® XC 11122 Water-resistant resin for stereolithography

Category : Polymer , Rapid Prototyping Polymer

Material Notes:

Description WaterShed XC is a low viscosity liquid photopolymer that produces strong, tough, water-resistant, ABS-like parts. Most importantly parts created with WaterShed 11122 are nearly colorless, and look more like true, clear engineered plastic. In addition, WaterShed XC has been formulated with the DSM Somos Oxetane Advantage™ - an advanced chemistry platform that produces parts with outstanding water resistance and high dimensional stability. Application WaterShed XC 11122 offers many properties that mimic traditional engineering plastics including ABS and PBT. This makes the material ideal for many applications in the automotive, medical and consumer electronics markets and include: Lenses Packaging Water flow analysis RTV patterns Durable concept models Wind tunnel testing Quickcast patterns Information Provided by DSM Desotech Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_DSM-Somos-WaterShed-XC-11122-Water-resistant-resin-for-stereolithography.php

Physical Properties	Metric	English	Comments
Density	1.12 g/cc	0.0405 lb/in ³	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Water Absorption	0.35 %	0.35 %	ASTM D570-98
Viscosity	260 cP	260 cP	
	@Temperature 30.0 °C	@Temperature 86.0 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	47.1 - 53.6 MPa	6830 - 7770 psi	ASTM D638M
Elongation at Break	11 - 20 %	11 - 20 %	ASTM D638M
Elongation at Yield	3.3 - 3.5 %	3.3 - 3.5 %	ASTM D638M
Modulus of Elasticity	2.65 - 2.88 GPa	384 - 418 ksi	ASTM D638M
Flexural Strength	63.1 - 74.2 MPa	9150 - 10800 psi	ASTM D790M
Flexural Modulus	2.04 - 2.37 GPa	296 - 344 ksi	ASTM D790M
Izod Impact, Notched	0.200 - 0.300 J/cm	0.375 - 0.562 ft-lb/in	ASTM D256A
Graves Tear Strength	150.3 kN/m	857.5 pli	ASTM D1004

Thermal Properties	Metric	English	Comments
CTE, linear	66.0 - 67.0 µm/m-°C	36.7 - 37.2 µin/in-°F	
			ASTM E831-00

Thermal Properties	Metric @Temperature -40.0 - 0.000 °C	English @Temperature -40.0 - 32.0 °F	Comments
	90.0 - 96.0 µm/m-°C	50.0 - 53.3 µin/in-°F	ASTM E831-00
	@Temperature 0.000 - 50.0 °C	@Temperature 32.0 - 122 °F	
	170 - 189 µm/m-°C	94.4 - 105 µin/in-°F	ASTM E831-00
	@Temperature 50.0 - 100 °C	@Temperature 122 - 212 °F	
	185 - 189 µm/m-°C	103 - 105 µin/in-°F	ASTM E831-00
	@Temperature 100 - 150 °C	@Temperature 212 - 302 °F	
Deflection Temperature at 0.46 MPa (66 psi)	45.9 - 54.5 °C	115 - 130 °F	ASTM D648-98c
Deflection Temperature at 1.8 MPa (264 psi)	49.0 - 49.7 °C	120 - 121 °F	ASTM D648-98c
Glass Transition Temp, Tg	39.0 - 46.0 °C	102 - 115 °F	ASTM E1545-00

Optical Properties	Metric	English	Comments
Refractive Index	1.512 - 1.515	1.512 - 1.515	ASTM D542

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.4 - 3.5	3.4 - 3.5	ASTM D150-98
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.7 - 3.9	3.7 - 3.9	ASTM D150-98
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	3.9 - 4.1	3.9 - 4.1	ASTM D150-98
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	15.4 - 16.3 kV/mm	391 - 414 kV/in	ASTM D149-97a

Descriptive Properties	Value	Comments
Appearance	Optically Clear	
Dp (mm)	0.16	Slope of cure-depth vs. ln(E) curve
E10 (mJ/cm2)	54	Exposure that gives 0.254mm thickness
Ec (mJ/cm2)	11.5	Critical exposure

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