Product Data

Somos® GP Plus 14122

Description

DSM's Somos® GP Plus 14122 is a low-viscosity liquid photopolymer that produces water-resistant, durable and accurate three-dimensional parts. Somos® GP Plus 14122 has a white, opaque appearance with performance that mirrors production plastics like ABS and PBT.

Applications

Somos® GP Plus 14122 is ideal for many applications in the automotive, aerospace and consumer product industries. With USP Class VI and ISO 10993 approval, this material may also be used in certain biomedical, dental and skin contact applications. Somos® GP Plus 14122 is successful in creating functional prototypes, accurate medical and dental devices, humidity / water-resistant concept models, and durable low volume production parts.

TECHNICAL DATA - LIQUID PROPERTIES	
Appearance	Opaque White
Viscosity	~340 cps @ 30°C
Density	~1.16 g/cm^3 @ 25°C

TECHNICAL DATA - OPTICAL PROPERTIES		
E_C	13.0 mJ/cm^2	[critical exposure]
D_P	6.25 mils	[slope of cure-depth vs. ln (E) curve]
E_{10}	64 mJ/cm^2	[exposure that gives 0.254 mm (.010 inch) thickness]

TECHNICAL DATA			
Mechanical Properties		**Somos® GP Plus 14122**	
ASTM Method	Property Description	Metric	Imperial
D638M	Tensile Strength at Yield	47.2 - 47.6 MPa	6.8 - 6.9 ksi
D638M	Tensile Strength at Break	33.8 - 40.2 MPa	4.9 - 5.8 ksi
D638M	Elongation at Break	6 - 9%	6 - 9%
D638M	Elongation at Yield	3%	3%
D638M	Modulus of Elasticity	2,370 - 2,650 MPa	344 - 384 ksi
D638M	Poisson's Ratio	0.41	0.41
D790M	Flexural Strength	66.8 - 67.8 MPa	9.7 - 9.8 ksi
D790M	Flexural Modulus	2,178 - 2,222 MPa	315 - 322 ksi
D256A	Izod Impact (Notched)	23 - 29 J/cm	0.43 - 0.54 ft-lb/in
D3763	High Speed Puncture-Impact	4.6 J	3.36 ft-lb/in
D2240	Hardness (Shore D)	79	79
D570-98	Water Absorption	0.40%	0.40%

TECHNICAL DATA			
Thermal/Electrical Properties		**Somos® GP Plus 14122**	
ASTM Method	Property Description	Metric	Imperial
E831-05	C.T.E. -40 - 0°C (-40 - 32°F)	63 µm/m°C	37 µin/in°F
E831-05	C.T.E. 0 - 50°C (32 - 122°F)	89 µm/m°C	52 µin/in°F
E831-05	C.T.E. 50 - 100°C (122 - 212°F)	170 µm/m°C	87 µin/in°F
E831-05	C.T.E. 100 - 150°C (212 - 302°F)	172 µm/m°C	100 µin/in°F
D150-98	Dielectric Constant 60 Hz	3.8	3.8
D150-98	Dielectric Constant 1 KHz	3.7	3.7
D150-98	Dielectric Constant 1 MHz	3.4	3.4
D149-97A	Dielectric Strength	17.9 kV/mm	457 V/mil
E1545-00	Tg	41 - 43°C	111°F
D648	HDT @ 0.46 MPa (66 psi)	46°C	115°F
D648	HDT @ 1.81 MPa (264 psi)	41°C	105°F

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