

# Product Data

# Somos<sup>®</sup> 14120

a DSM Product

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## Product Description

DSM Somos<sup>®</sup> 14120 is a low viscosity liquid photopolymer that produces strong, tough and water-resistant parts. Parts created with Somos 14120 have a white, opaque appearance similar to production plastics.

## Applications

This ABS-like photopolymer is used in solid imaging processes, like stereolithography, to build three-dimensional parts. Somos 14120 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 functional prototypes, water-resistant applications, appearance models with minimal finishing, durable concept models, high humidity environment applications and RTV patterns



DSM Somos<sup>®</sup> 14120 is a low viscosity liquid photopolymer that produces strong, tough and water-resistant parts.

## Key Product Benefits:

- Water Resistant
- High Dimensional Stability
- Fast Processing Speeds

## Technical Data: Liquid Properties

Appearance	Opaque white
Viscosity	~240 cps @ 30° C
Density	1.10 g/cm <sup>3</sup> @ 25° C

## Technical Data: Optical Properties

E <sub>c</sub>	13.0 mJ/cm <sup>2</sup>	[critical exposure]
D <sub>p</sub>	6.25 mils	[slope of cure-depth vs. ln(E) curve]
E <sub>10</sub>	64 mJ/cm <sup>2</sup>	[exposure that gives 0.254 mm (.010 inch) thickness]

(continued)

For technical service, please visit: <http://www.dsmsomos.com>

Rev Date: 10/09

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Technical Data: Mechanical Properties		Somos 14120 UV Postcure		ABS (transparent)*		Polybutylene Terephthalate*	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength	45.7 MPa	6.6 ksi	45.7 MPa	6.6 ksi	55 MPa	7.9 ksi
D638M	Elongation at Break	8%	8%	42%	42%	20%	20%
D638M	Elongation at Yield	3%	3%	N/A	N/A	3.5 – 9%	3.5 – 9.0%
D638M	Modulus of Elasticity	2,460 MPa	357 ksi	2,000 MPa	290 ksi	2,700 MPa	392 ksi
D790M	Poisson's Ratio	0.23	0.23	N/A	N/A	N/A	N/A
D790M	Flexural Strength	68.9 MPa	9.2 ksi	73.5 MPa	10.6 ksi	80 MPa	11.6 ksi
D2240	Flexural Modulus	2,250 MPa	310 ksi	2,300 MPa	344 ksi	2,500 MPa	363 ksi
D256A	Izod Impact (notched)	23.5 J/m	0.44 ft-lb/in	160 J/m	1.5 – 2.0 ft-lb/in	120 J/m	0.56 ft-lb/in
D570-98	Hardness (Shore D)	81	81	N/A	N/A	98 – 120 (Rockwell R)	98 – 120 (Rockwell R)
D256A	Graves Tear	123,000 N/m	700 ft-lb/in	N/A	N/A	N/A	N/A
D570-98	Water Absorption	0.24%	0.24%	0.20 – 0.45 %	0.20 – 0.45%	0.16 %	0.16%

\*http://www.matweb.com

Technical Data: Thermal/Electrical Properties		Somos 14120 UV Postcure		ABS (transparent)*		Polybutylene Terephthalate*	
E831-05	C.T.E. -40°C - 0°C (-40°F – 32°F)	67 µm/m°C	37 µin/in°F	60 - 130 µm/m°C (no temp rage given)	33 - 72 µin/in°F (no temp rage given)	50 - 145 µm/m°C (no temp rage given)	28 - 81 µin/in°F (no temp rage given)
E831-05	C.T.E. 0°C - 50°C (32°F – 122°F)	93 µm/m°C	52 µin/in°F				
E831-05	C.T.E. 50°C - 100°C (122°F – 212°F)	156 µm/m°C	87 µin/in°F				
E831-05	C.T.E. 100°C - 150°C (212°F – 302°F)	180 µm/m°C	100 µin/in°F				
D150-98	Dielectric Constant 60 Hz	3.9	3.9	3.7	3.7	2.9 - 4.0 (no frequency specified)	2.9 - 4.0 (no frequency specified)
D150-98	Dielectric Constant 1KHz	3.8	3.8	not recorded	not recorded		
D150-98	Dielectric Constant 1MHz	3.5	3.5	3.7	3.7		
D149-97a	Dielectric Strength	14.6 kV/mm	370 V/mil	13.8 - 19.7 kV/mm	350 - 500 V/mil	14.7 – 30.0 kV/mm	373 - 762 V/mil
E1545-00	Tg	44°C	111°F	not recorded	not recorded	41°C	106°F
D648-98c	HDT @ 0.46 MPa (66 psi)	53°C	127°F	94 - 207°C	201 – 405°F	150°C	302°F
D648-98c	HDT @ 1.81 MPa (264 psi)	48°C	118°F	86.4 - 194°C	187 – 381°F	61°C	142°F

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