

# ProtoCast™ AF 19122

a DSM Product

## Product Description

DSM Somos® ProtoCast™ AF 19122 is a breakthrough for the investment casting industry. It 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 this unique photopolymer chemistry.

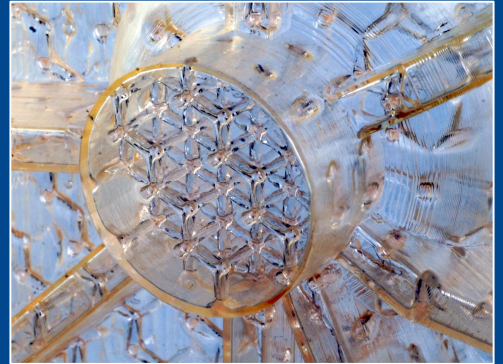
The absence of antimony also allows stereolithography patterns to burn out more completely, resulting in significantly lower residual ash than is produced by burning out conventional stereolithography patterns. Studies have shown that the residual ash of ProtoCast AF 19122 is less than 0.015% after burnout at 1500° F for two hours.

## Technical Data: Liquid Properties

Appearance	Clear Peach
Viscosity	~100 cps @ 30°C
Density	1.13 g/cm <sup>3</sup> @ 25°C

## Technical Data: Optical Properties

E <sub>c</sub>	11.5 mJ/cm <sup>2</sup>	[critical exposure]
D <sub>p</sub>	5.20 mils	[slope of cure-depth vs. ln(E) curve]
E <sub>10</sub>	85 mJ/cm <sup>2</sup>	[exposure that gives 0.254 mm (.010 inch) thickness]



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## Key Product Benefits:

- Very low ash
- High casting yields
- Antimony free

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

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## Technical Data: Mechanical Properties

		ProtoCast™ 19122	
ASTM Method	Property Description	Metric	Imperial
D638M	Tensile Modulus	2,013 – 2,187 MPa	292.0 – 317.2 ksi
D638M	Tensile Strength at Break	44.5 - 45.3 MPa	6.5 – 6.6 ksi
D638M	Elongation Break	6%	6%
D638M	Poisson's Ratio	N/A	N/A
D790M	Flexural Strength	73 – 76 MPa	10.6 – 11.0 ksi
D790M	Flexural Modulus	2,135 – 2,265 MPa	309.7 – 328.5 ksi
D2240	Hardness (Shore D)	84 – 86	84 – 86
D256A	Izod Impact (Notched)	0.17 – 0.29 J/cm	0.32 – 0.54 ft-lb/in
D570-98	Water Absorption	0.70%	0.70%

## Technical Data: Thermal/Electrical Properties

		ProtoCast™ 19122	
E831-05	C.T.E. -40°C - 0°C (-40°F – 32°F)	74.1 µm/m°C	41.2 µin/in°F
E831-05	C.T.E. 0°C - 50°C (32°F – 122°F)	96.3 µm/m°C	53.5 µin/in°F
E831-05	C.T.E. 50°C - 100°C (122°F – 212°F)	141.8 µm/m°C	78.8 µin/in°F
E831-05	C.T.E. 100°C - 150°C (212°F – 302 °F)	182.0 µm/m°C	101.1 µin/in°F
D150-98	Dielectric Constant 60 Hz	3.16	3.16
D150-98	Dielectric Constant 1KHz	3.12	3.12
D150-98	Dielectric Constant 1MHz	2.94	2.94
D149-97a	Dielectric Strength	14.53 – 15.24 kV/mm	369 – 387 V/mil
E1545-00	Tg	49°C	120°F
D648	HDT @ 0.46 MPa (66 psi)	59°C	138°F
D648	HDT @ 1.82 MPa (264 psi)	50°C	122°F

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