

Cubic Ink® High Performance 2-1400 VP

Multi-purpose SLA resin with good impact strength, chemical resistance and high clarity

Liquid Properties	Method	Value ¹	Unit
Viscosity (25 °C)	DIN EN ISO 3219	430	mPa·s
Density	DIN EN ISO 15212-1	1.10	g/mL
Surface Tension	Dynamic Bubble Pressure	37	mN/m
Critical Energy (E _c)	355 nm	7.5	mJ/cm ²
Depth of Penetration (D _p)	355 nm	0.15	mm
Tensile Properties			
Ultimate Tensile Strength	DIN EN ISO 527-5A ²	39	MPa
Yield Strength	DIN EN ISO 527-5A ²	39	MPa
Tensile Modulus	DIN EN ISO 527-5A ²	2100	MPa
Elongation at Break	DIN EN ISO 527-5A ²	14	%
Flexural Properties			
Flexural Strength	DIN EN ISO 178 ²	68	MPa
Flexural Modulus	DIN EN ISO 178 ²	1800	MPa
Deflection at Fracture	DIN EN ISO 178 ²	>10	%
Impact Properties			
Izod notched	DIN EN ISO 180	38	J/m
Charpy notched	DIN EN ISO 179-1	3.8	kJ/m ²
Izod unnotched	DIN EN ISO 180	370	J/m
Charpy unnotched	DIN EN ISO 179-1	42	kJ/m ²
Hardness			
Shore Hardness (green)	DIN EN ISO 7619	73 – 79	D
Shore Hardness	DIN EN ISO 7619	80	D
Thermomechanical Properties			
T _g	TMA ³	42	°C
HDT A	DIN EN ISO 75	47	°C
HDT B	DIN EN ISO 75	51	°C
CTE (–50 °C, 30 °C)	DIN EN ISO 11359-2	68	x 10 ⁻⁶ K ⁻¹
CTE (65 °C, 200 °C)	DIN EN ISO 11359-2	176	x 10 ⁻⁶ K ⁻¹
Specific Heat Capacity, 20 °C	DIN EN ISO 11357-4	1.8	J/(g·K)

Electrical Properties

Dielectric strength	IEC60243-1	18	kV/mm
Dielectric strength after 24 h/23 °C H ₂ O	IEC60243-1	17	kV/mm
Relative Permittivity (Dielectric Constant, 22 °C, 10 000 Hz)	IEC60250	7.1	-
Dissipation Factor (22 °C, 10 000 Hz)	IEC60250	0.022	-
Volume Resistivity	IEC60093	4.2 x 10 ¹²	Ω·cm
Volume Resistivity after 7 d/23 °C H ₂ O	IEC60093	3.2 x 10 ¹²	Ω·cm
Comparative Tracking Index	IEC60112	>600	V

Other Properties

Water Uptake, 7 d, 23 °C	Internal	<0.1	%
Water Uptake, 42 d, 23 °C	Internal	3.1	%
Performance after Water Uptake, 7 d, 23 °C ⁴	Internal	<1	%
Thermal Ageing 80 °C for 168 h ⁴	Internal	<1	%
UV Ageing for 1000 h ⁵	ISO 4892-3 ⁶	3	%
Refractive Index	ISO 489 ⁷	1.375	-

Availability and Storage

Natural color is translucent blue. Also available in black, blue and grey. More colors on request.

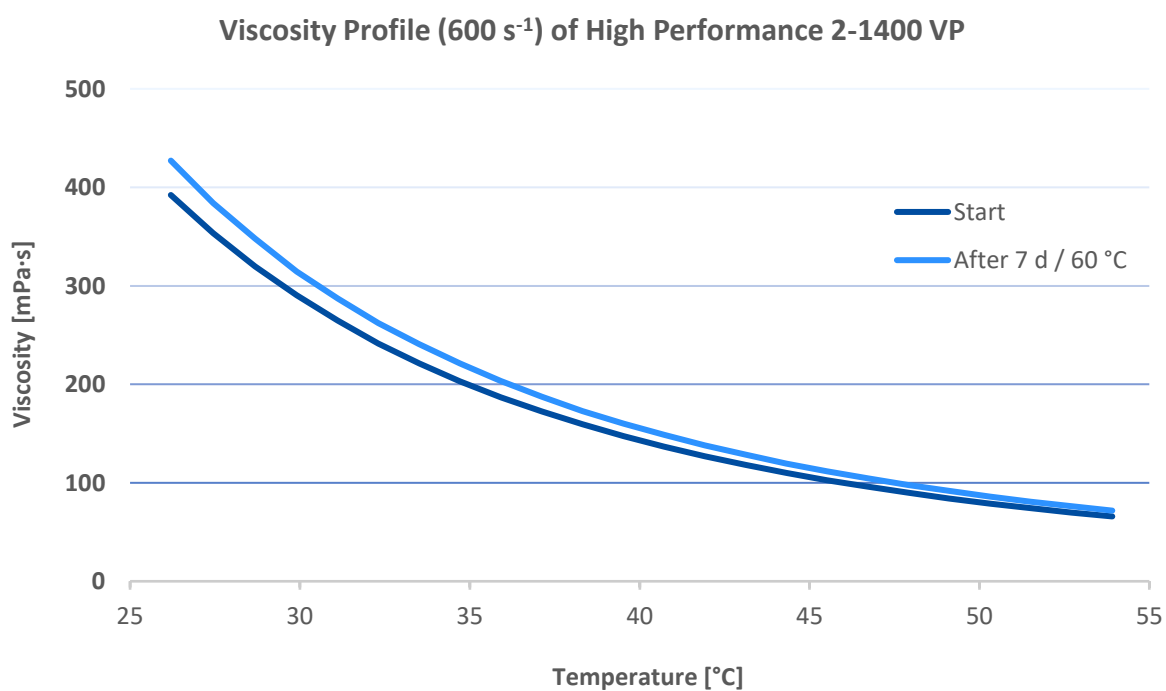
Batch size starting from 1 kg.

Shelf life 12 months, when stored at room temperature and protected from light. Stir prior to use.

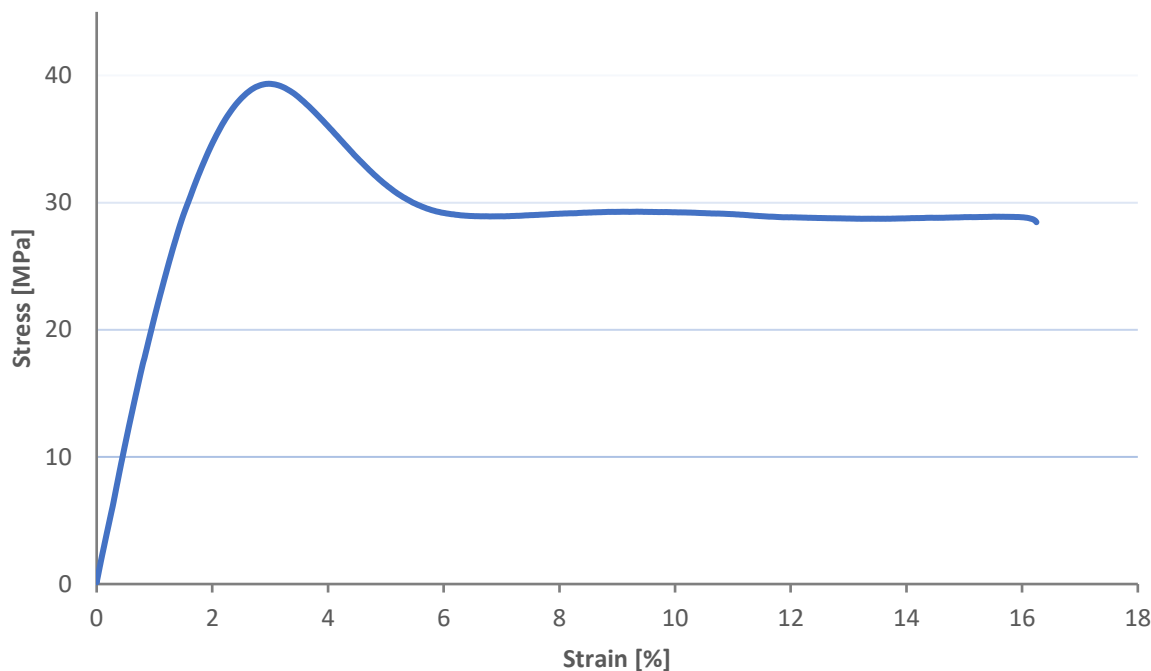
¹Properties may vary with post-processing – 2 x 10 min UV post-cure via *Meccatronicore BBCure* at 60 °C (100% LED, 365 and 405 nm). All material properties can vary with printer, print settings, object orientation, part geometry, post-processing and age of sample. ²5 mm/min; ³–50 - 200 °C, 5 K/min; ⁴Relative loss of tensile testing compared to reference, DIN EN ISO 527-5A, 5 mm/min; ⁵Relative loss of HDT B compared to reference, DIN EN ISO 75; ⁶QUV weathering tester; ⁷Completely cured and polished object, Bromonaphthalene as a conduct fluid.

Chemical Resistance	Mass Gain [%] ¹
Water	<0.1
Acetic Acid (5%)	<0.1
Hydrochloric Acid (1%)	<0.1
Nitric Acid (5%)	<0.1
Sodium Hypochlorite (10%)	0.2
Hydrogen Peroxide (3%)	<0.1
Sodium Hydroxide (1%)	0.2
Isopropyl Alcohol	0.7
Ethanol	2.1
Methanol	3.4
Butyl Glycol Acetate	0.7
Super Gasoline	1.8
Acetone	4.3
Methyl Ethyl Ketone	4.3

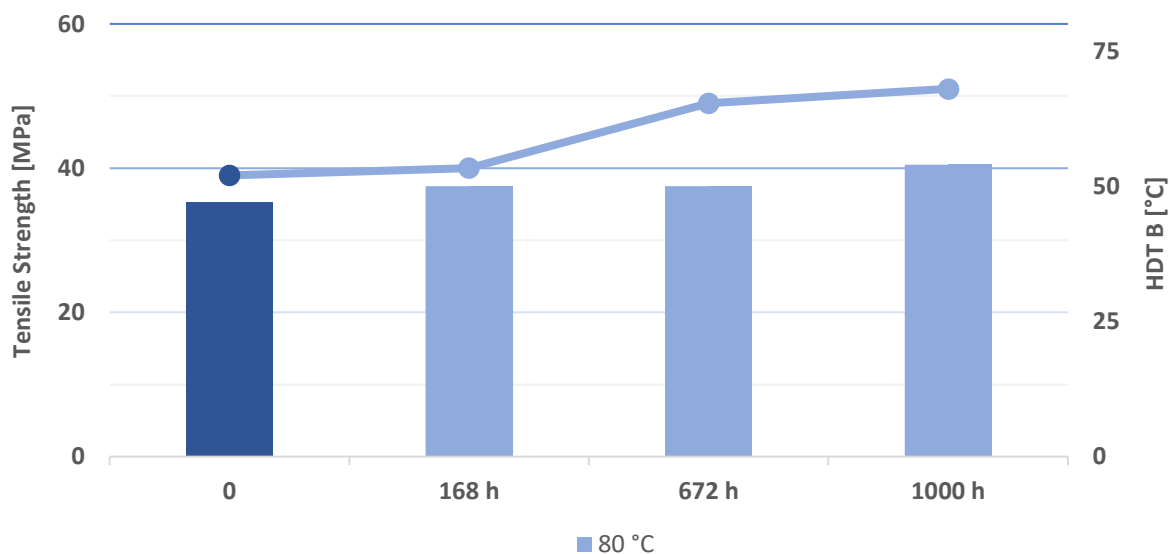
¹Percental weight gained after 24 h submersion of printed and post-cured (2 x 10 min UV post-cure via *Meccatronicore BBcure* at 60 °C (100% LED, 365 and 405 nm)) 1 x 1 x 1 cm³ cubes.



Tensile Testing of High Performance 2-1400 VP



Ageing of High Performance 2-1400 VP
(points - tensile strength & bars - HDT B)



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