Cubic Ink® High Performance 2-900 VP

Rigid material with a good temperature form-stability and chemical resistance for final part production

Liquid Properties	Value[1]	Unit
Viscosity @ 25 °C (DIN EN ISO 3219)	360	mPa·s
Density (DIN EN ISO 15212-1)	1.12	g/mL
Critical Energy (E_c) @405 / 385 nm	5.3 / 7.5	mJ/cm²
Depth of Penetration (D_p) @405 / 385 nm	0.31 / 0.19	mm
Tensile Properties[2] (DIN EN ISO 527-5A)		
Ultimate Tensile Strength	94	MPa
Tensile Modulus	3400	MPa
Elongation at Break	3.8	%
Flexural Properties[3] (DIN EN ISO 178)		
Flexural Strength	118	MPa
Flexural Modulus	3300	MPa
Deflection at Fracture	3.9	%
Impact Properties (DIN EN ISO 180)		
Izod notched (DIN EN ISO 180)	12	J/m
Charpy notched (DIN EN ISO 179-1)	1.2	kJ/m²
Izod unnotched (DIN EN ISO 180)	240	J/m
Charpy unnotched (DIN EN ISO 179-1)	21	kJ/m²
Hardness (DIN EN ISO 7619)		
Shore Hardness (green)	60 - 70	A
Shore Hardness	87	D

Thermal Properties (DIN EN ISO 75)

T_g (TMA)[4]	124	°C
HDT A	115	°C
HDT B	138	°C
CTE (–50 °C, 125 °C) (DIN EN ISO 11359-2)	70	x 10^{-6} K^{-1}
CTE (130 °C, 200 °C) (DIN EN ISO 11359-2)	167	x 10^{-6} K^{-1}
Specific Heat Capacity, 20 °C (DIN EN ISO 11357-4)	1.6	J/(g·K)

Electrical Properties

Dielectric strength (IEC60243-1)	25	kV/mm
Dielectric strength after 24 h/RT H_2O (IEC60243-1)	24	kV/mm
Relative Permittivity (Dielectric Constant, 22 °C, 10000 Hz, IEC60250)	8.1	-
Dissipation Factor (22 °C, 10000 Hz, IEC60250)	0.017	-
Volume Resistivity (IEC60093)	9.7 x 10^{14}	Ω·cm
Volume Resistivity after 7 d/RT H_2O (IEC60093)	3.4 x 10^{14}	Ω·cm
Comparative Tracking Index (IEC60112)	>600	V

Flame (UL94)

Flammability, horizontal (at 3.2 mm)	HB	-

Chemical Resistance

Water Uptake, 24 h, 23 °C	0.1	%
Water Uptake, 168 h, 23 °C[5]	1.0	%
Performance after Water Uptake, 24 h, 23 °C[6]	<1	%
Performance after Water Uptake, 168 h, 23 °C[6]	<1	%

Thermal Ageing[6]

125 °C for 1000 hours	5	%

Ageing at –40 °C[7]

for 168 hours	11	%

Print Appearance/ Color

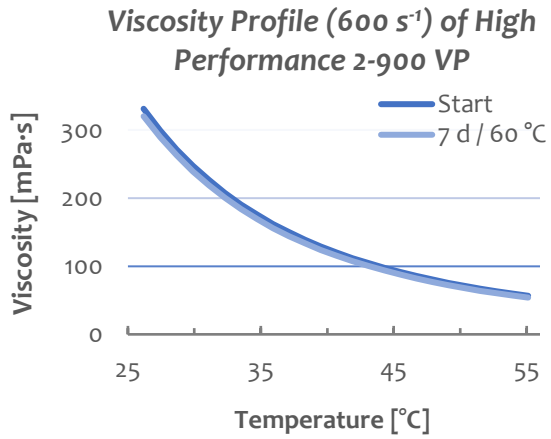
Natural color is translucent yellow. More colors on request.

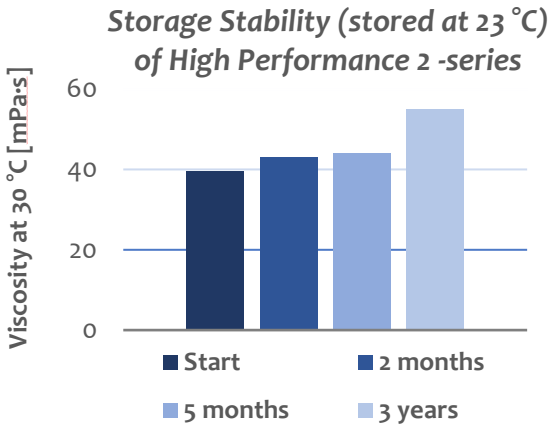
Availability and Storage

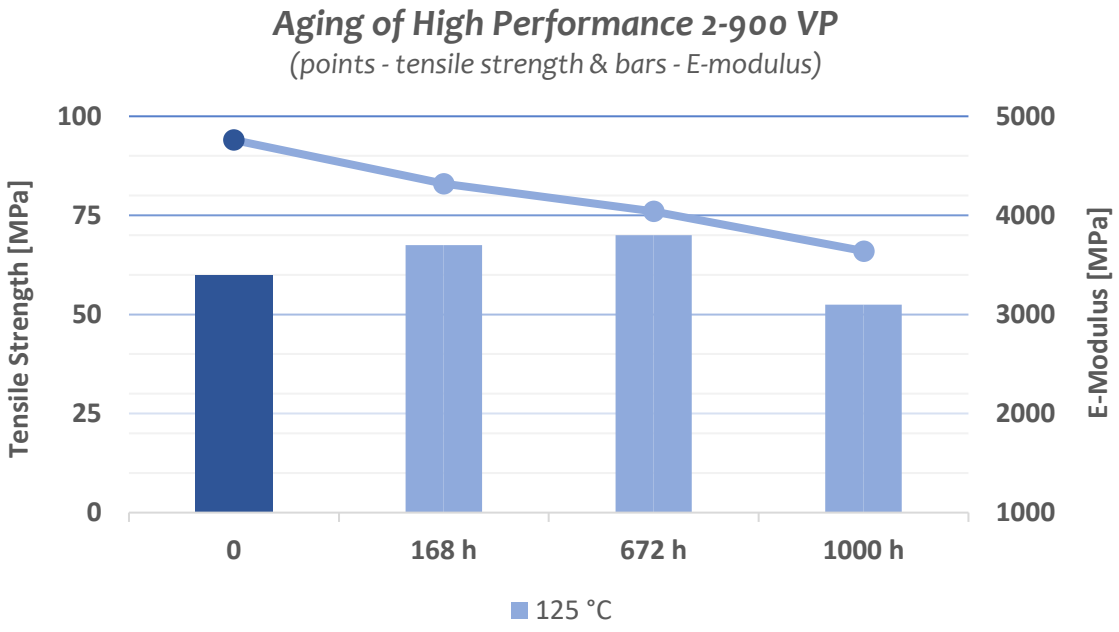
Batch sizes starting from 1 kg.

Store at 8 °C and protect from light.

[1]Properties with post-processing – washed with IPA, UV-post-cure followed by a thermal treatment up to 160 °C. All material properties can vary with printer, print settings, object orientation, part geometry, post-processing and age of sample. [2]5 mm/min; [3]5 mm/min; [4]–50 - 200 °C, 5 K/min (TMA); [5]Specimen DIN EN ISO 527-5A weight difference; [6]Relative loss of E-modulus, DIN EN ISO 527-5A, 5 mm/min; [7]Relative loss of HDT B.







Chemical Resistance	Mass Gain [%][1]	Performance Loss [%][2]
Water	0.1	4
Acetic Acid (5%)	0.2	3
Hydrochloric Acid (1%)	0.1	<1
Nitric Acid (5%)	0.1	<1
Sulfuric Acid (30%)	0.2	<1
Sodium Hypochlorite (10%)	0.1	<1
Hydrogen Peroxide (3%)	0.2	3
Hydrogen Peroxide (30%)	0.2	3
Sodium Hydroxide (1%)	0.2	6
Sodium Hydroxide (10%)	0.2	6
Isopropyl Alcohol	<0.1	3
Ethanol	0.1	<1
Methanol	1.3	12
Butyl Glycol Acetate	<0.1	<1
Super Gasoline	<0.1	<1
Acetone	0.5	<1
Methyl Ethyl Ketone	<0.1	<1

[1]Percental weight gained after 24 h submersion of printed and post-cured (IPA-washed, UV-post-cure followed by a thermal treatment up to 160 °C) 1 x 1 x 1 cm cubes; [2]Relative loss of E-modulus, DIN EN ISO 527-5A, 5 mm/min after 24 h submersion.

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