Cubic Ink® High Temperature 200 VP

Easy-to-print material with very high heat resistance

Liquid Properties	Value[1]	Unit
Viscosity @ 25 °C (DIN EN ISO 3219)	810	mPa·s
Density (DIN EN ISO 15212-1)	1.18	g/mL
Critical Energy (E_c) @405 / 385 nm	5.6 / 3.0	mJ/cm²
Depth of Penetration (D_p) @405 / 385 nm	0.22 / 0.25	mm
Tensile Properties[2] (DIN EN ISO 527-5A)		
Ultimate Tensile Strength	67	MPa
Tensile Modulus	4500	MPa
Elongation at Break	1.9	%
Flexural Properties[2] (DIN EN ISO 178)		
Flexural Strength	102	MPa
Flexural Modulus	4200	MPa
Deflection at Fracture	2.5	%
Impact Properties		
Izod notched (DIN EN ISO 180)	15	J/m
Charpy notched (DIN EN ISO 179-1)	0.6	kJ/m²
Hardness (DIN EN ISO 7619)		
Shore Hardness	90	D
Thermal Properties		
T_g (TMA)[3]	>250	°C
HDT A (DIN EN ISO 75)	>300	°C

HDT B (DIN EN ISO 75)	>300	°C
CTE (0 °C, 250 °C) (DIN EN ISO 11359-2)	70	x 10^{-6} K^{-1}
Specific Heat Capacity, 20 °C (DIN EN ISO 11357-4)	1.19	J/(g·K)

Electrical Properties

Dielectric strength (IEC60243-1)	22	kV/mm
Relative Permittivity (Dielectric Constant, 10 000 Hz, IEC60250)	23 °C: 7.6 201 °C: 7.2	-
Dissipation Factor (10 000 Hz, IEC60250)	23 °C: 0.008 201 °C: 0.004	-
Volume Resistivity (IEC60093)	5.4 x 10^{14}	Ω·cm
Volume Resistivity after 7 d/RT H_2O (IEC60093)	1.8 x 10^{15}	Ω·cm
Comparative Tracking Index (IEC60112)	>600	V

Flame (UL94)

Flammability, horizontal (at 3.2 mm)	HB (FH-3)	-

Chemical Resistance

Water Uptake, 30 min, 90 °C	0.5	%
Water Uptake, 168 h, 23 °C	1.7	%
Performance after Water Uptake, 30 min, 90 °C [4]	1	%
Performance after Water Uptake, 168 h, 23 °C[4]	<5	%

Thermal Ageing[4]

150 °C for 1000 hours	<1	%
250 °C for 168 hours	<5	%

Print Appearance/ Color

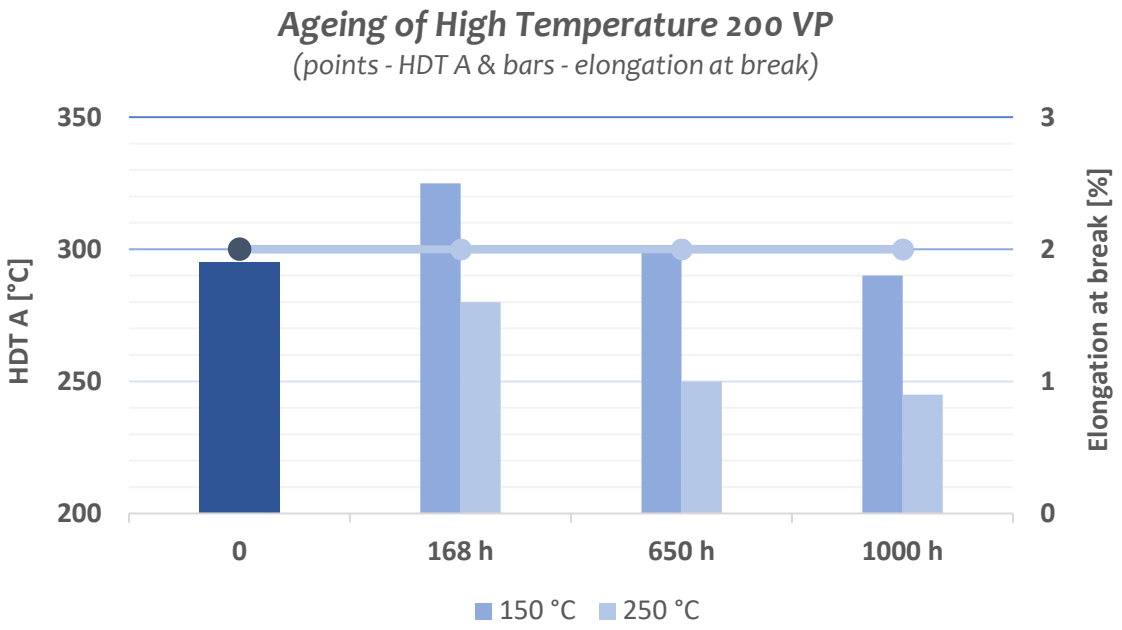
Natural color is translucent light yellow to brown depending on post-processing. Also available in black and grey. More colors on request.

Availability and Storage

Batch size starting from 1 kg.

Store at room temperature and protect from light. Stir prior to use.

[1]Properties may vary with post-processing – 30 min UV-post-cure followed by 3 h at 190 °C heating. All material properties can vary with printer, print settings, object orientation, part geometry, post-processing and age of sample. [2]5 mm/min; [3]20 - 250 °C, 5 K/min; [4]Relative loss of elongation at break and HDT A compared to reference, DIN EN ISO 527-5A, 5 mm/min and DIN EN ISO 75.



Chemical Resistance	Mass Gain [%][1]
Water	0.3
Acetic Acid (5%)	0.3
Hydrochloric Acid (1%)	0.3
Nitric Acid (5%)	0.3
Sodium Hypochlorite (10%)	0.6
Hydrogen Peroxide (3%)	0.4
Sodium Hydroxide (1%)	0.3
Isopropyl Alcohol	0.2
Ethanol	0.2
Methanol	0.3
Butyl Glycol Acetate	0.2
Super Gasoline	0.2
Acetone	0.2
Methyl Ethyl Ketone	0.2

[1]Percental weight gained after 24 h submersion of printed and post-cured (30 min UV-post-cure followed by 3 h at 190 °C) 1 x 1 x 1 cm^3 cubes.

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