ALTANA

We give shape to ideas®

ALTANA Cubic Ink® High Performance Materials
suitable for DLP, LCD, SLA, mSLA and Material Jetting



Release Date: October 2026

ALTANA
Global Leader in Specialty Chemicals

The ALTANA Group develops and manufactures high-quality, innovative specialty chemical products. ALTANA's four divisions – BYK, ECKART, ELANTAS, and ACTEGA – have set worldwide standards in their markets.

The Group offers innovative, environmentally compatible special solutions for coatings manufacturers, coatings and plastics processors, the printing and packaging industry, the cosmetics sector, and the electrical industry. The product range includes additives, special coatings and adhesives, effect pigments, sealants and potting compounds, impregnating agents as well as testing and measuring instruments. The four divisions of ALTANA each hold leading positions in their target markets in terms of quality, product solution competence, innovation and service. Our innovative products enable companies to develop future technologies today, technologies that make life easier, safer, and more comfortable.

The ALTANA Group is headquartered in Wesel on the Lower Rhine and has 68 production sites and 71 service and research laboratory sites worldwide. Across the Group, around 8,000 employees work for the global success of ALTANA. In 2025, the company achieved sales of around 3.1 billion euros. About 8 percent of this is invested in research and development each year. With a high profitability compared to the industry as a whole, ALTANA is one of the most innovative as well as fastest-growing and most profitable chemical companies in the world.

We are ALTANA



Cubic Ink® Technologies

UV-curable Resins and Inks for various 3D Printing Technologies



Resins
DLP, LCD, mSLA



Resins
SLA



Inks
(Multi-)Material Jetting

Vat Polymerization
- Easy-to-access and affordable
- Higher viscosities allow for big variety of material properties
- Light source dependency on materials' performance

Inkjet
- Multimaterial capacity
- Multicolor capacity
- Very high precision

Cubic Ink® Applications

Thermoset Materials perform in various Industrial Applications

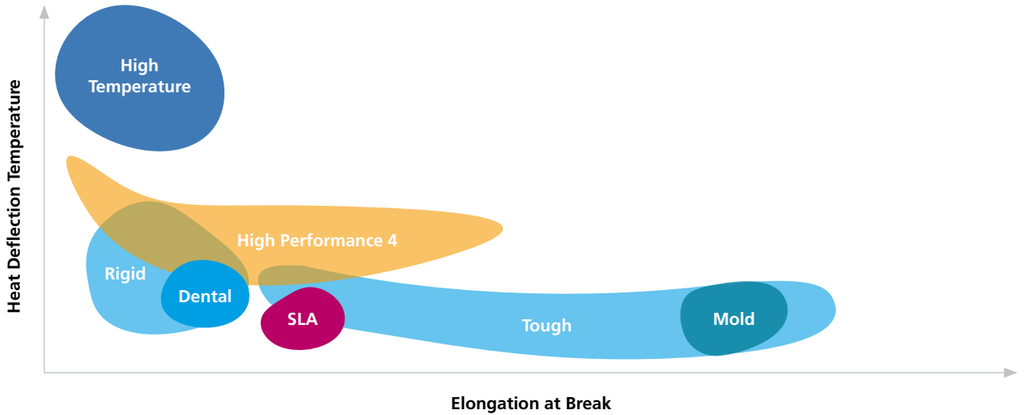
Fulfilling customers' wishes, thinking ahead, or even exceeding customer requirements: With this aspiration, Cubic Ink® offers innovative 3D printing materials to perform in various industrial applications. We address industrial relevant properties and work with you on your process solutions.

Tooling
Production Tooling
Machinery
Automotive
Connectors
Aerospace
Household
Optical Applications
Microfluidigs
Transpor-tations
Toys
Medical Applications
Audiology
Dental
Eyewear
Footwear

Your advantage 3D printing via photo-activation
- Fast and accurate
- Superior smooth surfaces
- Thermoset materials

Cubic Ink® Material Portfolio
Resins for DLP, LCD, mSLA and SLA

We are setting new standards for industrial 3D printing. Our resin portfolio spans from dental modelling, rigid and tough to high performance materials such as very high temperature and chemical resistance, impact strength and ESD-capability. Specially tooling applications for casting and injection molding are met with our Mold materials.





Water-breakable Tooling Equipment
Mold Page 10–15

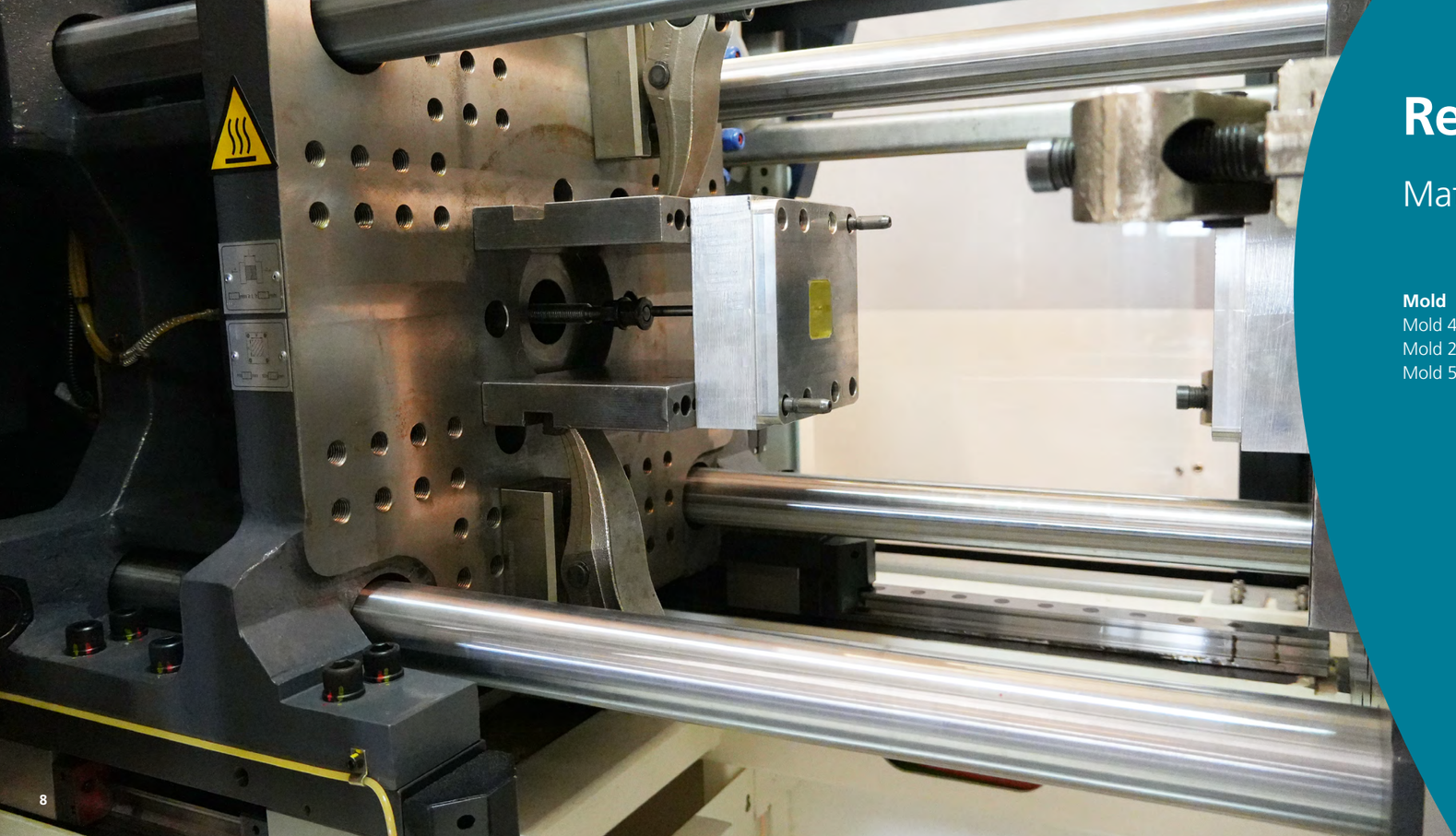
Functional Prototyping
Dental Page 18–19
Rigid Page 20
Tough Page 21

Chemical Resistance & High HDT
High Temperature Page 24

ESD-Capacity
High Performance 4 Page 25

High Impact & HDT
High Performance 4 Page 26–27

SLA
High Performance 2 Page 30–31



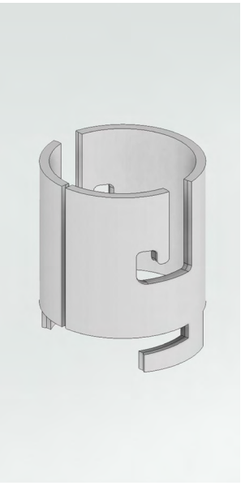
Resins for Molding and Tooling

Materials for DLP, LCD and mSLA 3D Printing Technologies

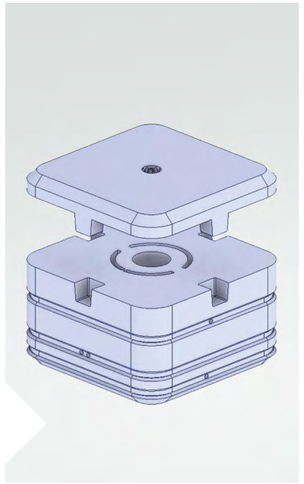
Mold

Mold 400 VP Uncolored	Page 12
Mold 2201 VP Translucent Orange	Page 12
Mold 5000 VP Green	Page 14

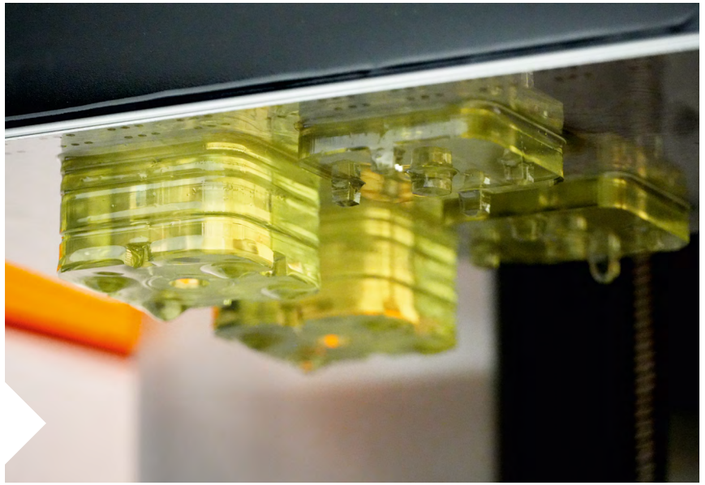
Cubic Ink® One-Shot Mold Technology
Design Freedom meets Speed



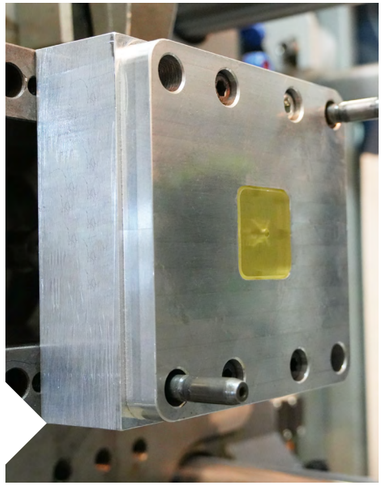
1. Production Part



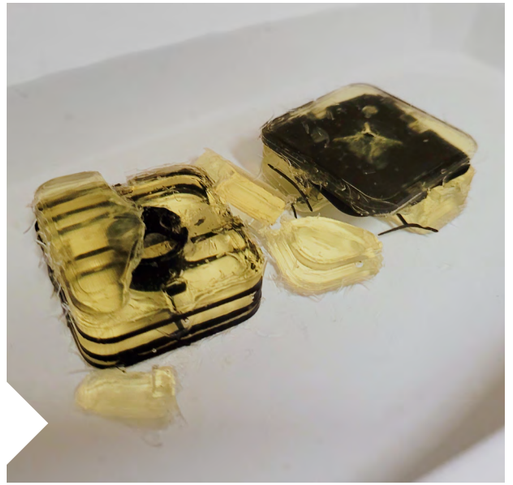
2. Construction of Tool



3. 3D-Printing of Tool



4. Injection Molding



5. Mold Removal via Water-Bath



6. Finished Part

Cubic Ink®
Mold for injection molding

Water-breakable cast materials for injection molding, cast applications and prepregs – for the creation of real functional prototypes or design studies with the target material

The One-Shot Mold (OSM) technology combines excellent compatibility of a 3D printed mold with typical filling materials tolerating high temperatures and pressure conditions, as well as user-friendly removal resulting in automatable short cycle times.

Its water-breakable character enables a complete breakup when exposed to water with minimal swelling. Thus, our material allows for complete design freedom of parts, including the generation of complex and fine structures, as well as lost core designs.



Materials can be used in

Tooling | Injection Molding | Casting | Prepregs

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Print Accuracy	Very Good
Min Wall Thickness (Mold)	200 µm
Max Temperature at Process	400 °C
Max Pressure at Process	1200 bar
Minimum Thickness Filling Material	100 µm
Swelling in Water at Removal	Minimal

Mold 400 VP Uncolored

Mold 2201 VP Translucent Orange

Scan the QR-Code for the technical datasheet and more information.

Technical Details

Removal

Solubility in Water: Media vs. Object Complexity

	Simple	Medium	Complex
H_2O, 23 °C			
H_2O, 50 °C			
Alkalic base[4], 23 °C			
Alkalic base[4], 50 °C			

Casting: 1–10 min; Injection Molding: 2–48 hours

Mold 2201 VP Translucent Orange with improved dissolution time. NEW

[1]The list is continuously expanded according to customer feedback. Potentially higher filling grades possible. [2]Such as ARBOFILL®; [3]Pot life up to 3.5 h. [4]Alkalic aqeous media significantly increase the water solubility and accelerates the de-molding process.

Material Compatibility

Successfully tested in various applications[1]

Injection Molding	
PE, PP (50 % filling)	
PA (50 % filling)	
ABS	
PVC	
PC, PMMA (20 % filling)	
PPS (80 % powder), PPA, PEEK (30 % filling)	
TPE, TPU	
Compounds from renewable feedstock[2]	
Compounds from recyclable feedstock	

Casting and Prepregs	
2K Silicones (RTV and LRS)[3]	
2K Epoxides (incl. GF and other fillers)	
2K Polyurethanes	
2K Polyesters	
Metal(-alloys) (m.p. < 200 °C)	
CF-epoxy composite (up to 3 bar, 150 °C)	

Cubic Ink®
Mold for Audiology

Water-breakable cast material designed for audiology applications

ALTANA Cubic Ink® offers an easy-to-print and -process material for casting of audiology molds with a broad compatibility towards common 2K silicones including RTV and LRS with pot lives up to 3.5 h.

Its superior performance in fast and user-friendly breakability in water without sharp edges to protect the silicone and operator is due to well balanced material properties that also allow for sufficient stiffness for automated silicon filling processes.



Materials can be used in

Audiology

Casting

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Compatibility with 2K-Silicones	Excellent
Removability of Cast	Easy removal in water
Minimum Wall Thickness (Mold)	400 µm
Processability	Very Good

Mold 5000 VP Green

Scan the QR-Code for the technical datasheet and more information.





Resins for Functional Prototyping

Materials for DLP, LCD and mSLA 3D Printing Technologies

Dental
Dental 3000 VP Ligh Tan Page 18
Dental 3201 VP Sand Color Page 18

Rigid
Rigid 1600 VP Black Page 20
Rigid 2000 VP Black Page 20

Tough
Tough 2100 VP Black Page 21
Tough 3100 VP Black Page 21

Cubic Ink® Dental

Materials for dental models

ALTANA Cubic Ink® materials for the dental sector without direct patient contact, for example, for the production of models for the thermoforming of aligners or fitting, are characterized by high-resolution and hollow object-printing with high detail sharpness and dimensional accuracy.

Fine-tuned thermo-mechanical properties and a good scratch resistance allow for a robust post-treatment and further processing via temperature and pressure. Special isolating effect of Cubic Ink® Dental 3201 VP Sand Color accelerates the workflow while fitting with denture repair plastics.



Copyright: By onez_1759066 https://www.printables.com/model/754202-dental-model-upper-and-lower-teeth-set

Materials can be used in

Dental

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Price and Processability	Very Good
Material Thickness for Hollow Structures	>3 mm
Thermoforming-Process	up to 220 °C
Flexural Strength	83 MPa

Dental 3000 VP Light Tan

Dental 3201 VP Sand Color

Scan the QR-Code for the technical datasheet and more information.

Model materials in various applications

Modelling



Fitting with denture plastics

Model materials with isolator effect to enhance workflow.



Thermoforming





Cubic Ink® Rigid

Rigid materials for high precision objects with balanced (thermo-)mechanical properties

ALTANA Cubic Ink® Rigid Materials for the production of prototypes to final components offer the user very robust and mechanical properties at elevated temperatures and towards drilling and thread cutting as well as excellent chemical resistance at attractive prices.

Different material variants enable the production of high-precision objects on common DLP and LCD printers.



Materials can be used in

Tooling · Machinery · Automotive · Household

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Price	Low
HDT B	80–115 °C
Flexural Strength	105–124 MPa
Chemical Resistance	Superior

Rigid 1600 VP Black

Rigid 2000 VP Black

Scan the QR-Code for the technical datasheet and more information.

Cubic Ink® Tough

All-round materials with balanced and improved ductility

The Tough product family from ALTANA Cubic Ink® offers excellent opportunities to produce detailed objects with long-term toughness, ductility and impact resistance at a good price-performance ratio.

Depending on the product variant, it is suitable for the rapid production of prototypes through to the production of functional parts in small series like jigs and fixtures and with functional elements like snap fits.



Materials can be used in

Tooling · Machinery · Medical Applications · Toys

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Processing	Very Easy
Tensile Modulus	1800–2600 MPa
Elongation at Break	13–80 %
Izod notched	29–39 J/m

Tough 2100 VP Black

Tough 3100 VP Black

Scan the QR-Code for the technical datasheet and more information.



High Temperature and High Performance Resins for Industrial Additive Manufacturing

Materials for DLP, LCD and mSLA 3D Printing Technologies

High Temperature

High Temperature 1901 VP Black	Page 24

High Performance 4

High Performance 4-2800 VP-ESD Black	Page 25
High Performance 4-4800 VP EU Grey	Page 26
High Performance 4-4800 VP Black	Page 26

Cubic Ink®
High Temperature

Material with very high heat and chemical resistance

ALTANA Cubic Ink® High Temperature 1901 VP Black is the first choice for applications with high demands on chemical and heat resistance.

Due to its excellent thermal and chemical stability, heat deflection temperature above 250 °C, reduced brittleness and improved impact resistance, this material is designed for use in harsh environments. If necessary for applications in the medical field, the material additionally passes the cytotoxicity requirements.



Materials can be used in

Tooling · Production Tooling · Prepregs · Machinery

Performance Indicators

Printing Technology	DLP, LCD, mSLA
HDT B	279 °C
CTE (-50–200 °C)	70–130 ppm/K
Chemical Resistance	Superior
Cytotoxicity-Test	Passed

High Temperature 1901 VP Black

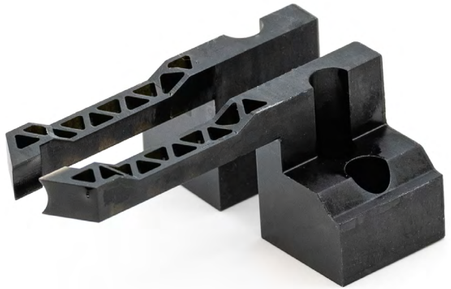
Scan the QR-Code for the technical datasheet and more information.

Cubic Ink®
High Performance 4-ESD

ESD material with excellent processability and low viscosity

ALTANA Cubic Ink® ESD materials are designed to meet the customer's ESD requirements. Thanks to their low viscosity a very good processability is given. The tough yet customizable range of properties of these materials makes them a good choice for a broad range of applications.

Cubic Ink® High Performance 4-2800 VP-ESD Black passes new international standards following IEC61340-2-3.



Materials can be used in

Transportation · Machinery · Tooling

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Volume Resistivity	5.5 x 10^7 Ω·cm
HDT B	94 °C
Elongation at Break	4.0 %
Chemical Resistance	Very Good

High Performance 4-2800 VP-ESD Black

Scan the QR-Code for the technical datasheet and more information.

Cubic Ink®
High Performance 4

Highly versatile technical all-round materials
Biocompatibility upon request.

From the manufacture of orthopaedic aids and mechanically resilient parts to eyewear frames or household goods, there are many areas of application for the user with Cubic Ink® High Performance 4-4800 VP.

Well-balanced toughness, very high impact, fracture and temperature resistance, combined with very good surface quality and print accuracy makes these materials a customer's choice for final part production.



Materials can be used in

Automotive · Household · Medical Applications · Eyewear

Performance Indicators

Printing Technology	DLP, LCD, mSLA
Izod notched	40–81 J/m
HDT B	85 °C
Elongation at Break	20 %
Cytotoxicity-Test	Passed

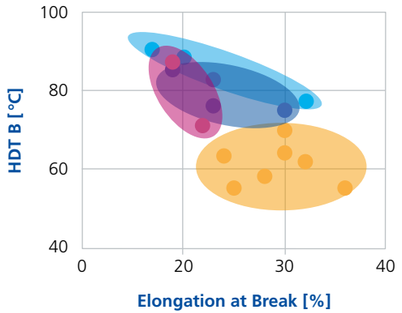
HP 4- 4800 VP EU Grey

HP 4- 4800 VP Black

Scan the QR-Code for the technical datasheet and more information.

Technical Details

Post-Curing of HP 4-4800 VP EU Grey



- Hg (elevated temperatures during process)
- Flashes (elevated temperatures during process)
- LED (≤60 °C)
- LED (≥80 °C)





Resins for Functional Prototyping and Tooling

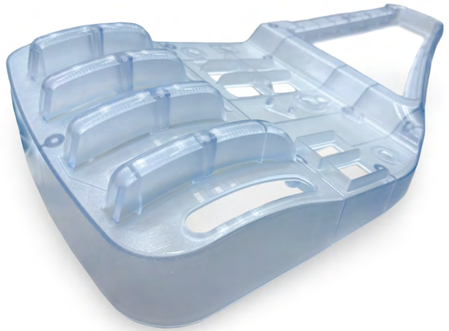
Materials for SLA 3D Printing Technologies

High Performance 2
High Performance 2-1400 VP Translucent Blue Page 30

Cubic Ink®
High Performance 2

Transparent all-round material for stereolithography

ALTANA Cubic Ink® High Performance 2-1400 VP Translucent Blue is a transparent material with a balanced set of mechanical and thermomechanical properties. It has a very low water uptake, a good surface finish and low shrinkage to print highly detailed parts. This material is especially designed for use on stereolithography printers.



Materials can be used in

Tooling · Optical Applications · Toys · Household

Performance Indicators

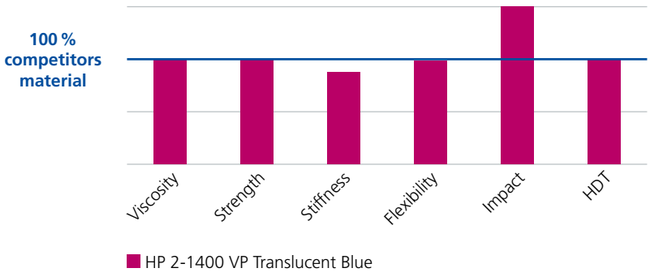
Printing Technology	SLA
Water-Uptake	<0.1 %
Chemical Resistance	Very Good
Izod notched	38 J/m
Shrinkage	Low

High Performance 2-1400 VP Translucent Blue

Scan the QR-Code for the technical datasheet and more information.

Technical Details

Comparison to competitors state-of-art SLA resin



Benefits of SLA-Technology
- Top-down vat polymerization
- Laser technology (355 nm)
- Fast and accurate
- Dual-cure thermosets
- Viscosity-stability
- Low shrinkage





Inks for Functional Prototyping, Supports and Special Applications

Materials for Multi-Material 3D Printing

Support Material
Support 5300 Page 34

Tough and Rigid Multi-Material Capacity
Tough 1700 Page 35
Rigid 1700 Page 35

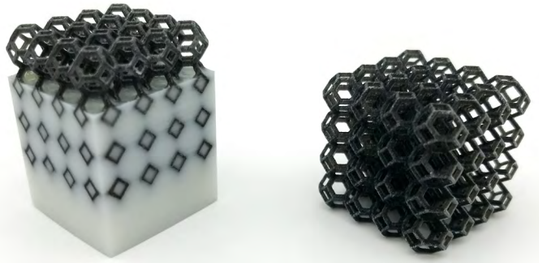
Cubic Ink®
Support Material

Easy to remove water-soluble support material

ALTANA Cubic Ink® Support 5300 for material jetting is carefully matched to the object inks and, after dissolving in water, produces objects with high surface quality and sharpness of detail.

Due to the water-soluble character, the supports can be removed automatically in a water-bath without chemical solvents or manually with low forces.

The ink can be processed excellently on many print head types and with the corresponding ink supply systems, but can also be adapted to specific requirements.



Materials can be used in

Industrial Tooling

Performance Indicators

Printing Technology	Material Jetting
Support Removal	Water
Dissolution Time[1]	1 hour
Viscosity (at 30 °C)	28 mPa·s
Shore Hardness	40–60 D

[1] Time until total dissolution of support based on a model geometry in water at 40 °C and ultra-sound.

Support 5300

Scan the QR-Code for the technical datasheet and more information.

Cubic Ink®
Tough and Rigid Multi-Material Capacity

UV curable rigid and tough inks for material jetting

Benefit from the possibilities of Material Jetting with the ALTANA Cubic Ink® portfolio such as multi-color or multi-material printing to combine different segments. Based upon our deep understanding and experience regarding low viscosity fluids, we can offer a broad range of inks for various end-uses.

Additionally, material jetting is also suitable for coating existing objects with functional or decorative, tactile effects.



Materials can be used in

Industrial Machinery Optical Applications Automotive

Performance Indicators

Printing Technology	Material Jetting
Color	CMYK, White, Clear
Ink Stability	Very Good
Shore Hardness	50–85 D
Elongation at Break	3–35 %
Water-Uptake	Low
Chemical Resistance, Ageing and Weatherability (DIN74069)	Good

Rigid 1700 **Tough 1700**

Scan the QR-Code for the technical datasheet and more information.

Cubic Ink® – Molding, Dental and Functional Prototyping

Properties and Characterization methods[1]		Mold 400 VP Uncolored	Mold 2201 VP Translucent Orange	Mold 5000 VP Green	Dental 3000 VP Light Tan	Dental 3201 VP Sand Color	Tough 2100 VP Black	Tough 3100 VP Black
Viscosity @25 °C [mPa·s]	DIN EN ISO 3219	70	45	150	710	200	160	340
Tensile Strength [MPa]	DIN EN ISO 527-5A	42	38	19	51	29	66	36
Tensile Modulus [MPa]	DIN EN ISO 527-5A	1900	1700	530	2500	1800	2600	1800
Elongation at Break [%]	DIN EN ISO 527-5A	42	23	34	7.0	4.2	13	79
Flexural Strength [MPa]	DIN EN ISO 178	–	–	–	83	–	112	59
Flexural Modulus [MPa]	DIN EN ISO 178	–	–	–	2200	–	2700	1600
Deflection at Fracture [%]	DIN EN ISO 178	–	–	–	>10	–	>10	>10
Shore Hardness	DIN EN ISO 7619	80 D	62 D	60 D	85 D	78 D	83 D	78 D
Izod unnotched [J/m]	DIN EN ISO 180	–	–	–	–	–	570	213
Izod notched [J/m]	DIN EN ISO 180	–	–	–	–	–	39	29
Charpy unnotched [kJ/m²]	DIN EN ISO 179-1	–	–	–	–	–	61	41
Charpy notched [kJ/m²]	DIN EN ISO 179-1	–	–	–	–	–	3.2	2.8
HDT A [°C]	DIN EN ISO 75	–	–	–	–	–	60	–
HDT B [°C]	DIN EN ISO 75	–	–	45	70	–	71	57
Tg [°C]	DSC, TMA, DMA	–	–	–	–	–	95	–
Flammability	UL 94	–	–	–	–	–	HB	HB

Cubic Ink® – Molding, Dental and Functional Prototyping

Properties and Characterization methods[1]		Mold 400 VP Uncolored	Mold 2201 VP Translucent Orange	Mold 5000 VP Green	Dental 3000 VP Light Tan	Dental 3201 VP Sand Color	Tough 2100 VP Black	Tough 3100 VP Black
Water Uptake, 24 h, 23 °C [%]		–	–	–	0.2	–	3.5	0.7
Chemical Resistance		–	–	–	Very Good	–	Adequate	Good
Thermal stability		–	–	–	–	–	Very Good	Very Good
UV-ageing / Weathering	ISO 4892-3	–	–	–	–	–	Adequate	Very Good
CTE [10-6 K-1]	DIN EN ISO 11359-2	86 / 154	111 / 94	–	–	–	72 / 169	–
Specific Heat Capacity, 20 °C [J/(g K)]	DIN EN ISO 11357-4	1.5	–	–	–	–	1.4	–
Dielectric strength [kV/mm]	IEC 60243-1	–	–	–	–	–	29	40
Relative Permittivity (10,000 Hz, 23 °C)	IEC 60250	–	–	–	–	–	7.0	–
Volume Resistivity [Ω·cm]	IEC 60093	–	–	–	–	–	9.6×10^{14}	7.9×10^{13}
Comparative Tracking Index [V]	IEC 60112	–	–	–	–	–	>600	>600
Cytotoxicity-test	DIN EN ISO 10993-5	–	–	–	Passed	–	–	–

[1] Properties with post-processing – washed with different fluids and different UV post-treatment. All material properties can vary with printer, print settings, object orientation, part geometry, post-processing and age of sample. For more information and details please take a look into the proper TDS.

Cubic Ink® – Functional Prototyping and High Performance Resins

Properties and Characterization methods[1]		Rigid 1600 VP Black	Rigid 2000 VP Black	HT 1901 VP Black	HP 4-2800 VP-ESD Black	HP 4-4800 VP EU Grey	HP 4-4800 VP Black	HP 2-1400 VP Translucent Blue
Viscosity @25 °C [mPa·s]	DIN EN ISO 3219	770	340	220	95	780	500	430
Tensile Strength [MPa]	DIN EN ISO 527-5A	62	86	56	65	34	43	39
Tensile Modulus [MPa]	DIN EN ISO 527-5A	3000	3200	2200	2700	1500	1700	2100
Elongation at Break [%]	DIN EN ISO 527-5A	3.2	4.8	4.4	4.0	22	20	14
Flexural Strength [MPa]	DIN EN ISO 178	105	124	74	–	55	50	68
Flexural Modulus [MPa]	DIN EN ISO 178	2700	3300	2000	–	1400	1400	1800
Deflection at Fracture [%]	DIN EN ISO 178	7.1	5.1	7.3	–	>10	>10	>10
Shore Hardness	DIN EN ISO 7619	85 D	88 D	83 D	86 D	76 D	78 D	80 D
Izod unnotched [J/m]	DIN EN ISO 180	–	–	–	–	390	–	370
Izod notched [J/m]	DIN EN ISO 180	15	–	13	17	81	40	38
Charpy unnotched [kJ/m²]	DIN EN ISO 179-1	–	–	–	–	–	82	42
Charpy notched [kJ/m²]	DIN EN ISO 179-1	–	1.4	1.0	–	11	5.6	3.8
HDT A [°C]	DIN EN ISO 75	–	97	114	–	64	60	47
HDT B [°C]	DIN EN ISO 75	80	115	279	94	84	86	51
Tg [°C]	DSC, TMA, DMA	–	135	>300	107	93	96	42
Flammability	UL 94	–	HB	HB	–	HB	HB	–

Cubic Ink® – Functional Prototyping and High Performance Resins

Properties and Characterization methods[1]		Rigid 1600 VP Black	Rigid 2000 VP Black	HT 1901 VP Black	HP 4-2800 VP-ESD Black	HP 4-4800 VP EU Grey	HP 4-4800 VP Black	HP 2-1400 VP Translucent Blue
Water Uptake, 24 h, 23 °C [%]		0.2	0.3	0.4	0.3	0.6	1.7	<0.1
Chemical Resistance		Very Good	Superior	Superior	Very Good	Adequate	Adequate	Very Good
Thermal stability		–	Superior	Very Good	Very Good	Very Good	Very Good	Good
UV-ageing / Weathering	ISO 4892-3	–	Very Good	Good	–	Good	Good	Very Good
CTE [10-6 K-1]	DIN EN ISO 11359-2	–	60 / 157	73 / 130	76 / 169	116 / 150	126	68 / 176
Specific Heat Capacity, 20 °C [J/(g K)]	DIN EN ISO 11357-4	–	1.2	1.0	1.4	1.4	1.3	1.8
Dielectric strength [kV/mm]	IEC 60243-1	–	27	26	2	28	28	18
Relative Permittivity (10,000 Hz, 23 °C)	IEC 60250	–	5.6	6.1	–	6.1	6.4	7.1
Volume Resistivity [Ω·cm]	IEC 60093	–	1.7×10^{15}	1.4×10^{15}	5.5×10^{7}	9.1×10^{13}	3.4×10^{14}	4.2×10^{12}
Comparative Tracking Index [V]	IEC 60112	–	>600	>600	>600	>600	>600	>600
Cytotoxicity-test	DIN EN ISO 10993-5	Passed	–	Passed	–	Passed	Passed	–

[1] Properties with post-processing – washed with different fluids and different UV post-treatment. All material properties can vary with printer, print settings, object orientation, part geometry, post-processing and age of sample. For more information and details please take a look into the proper TDS.

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