PRODUCT CATALOG

Advanced Liquid Technology

Resins for SLA, DLP & LCD 3D-printing.

LIQCREATE

OUR COMPANY

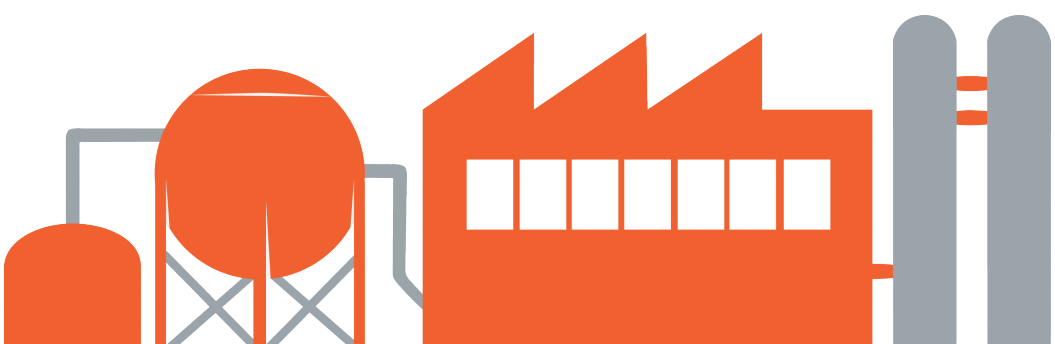
Liqcreate is a company specialized in developing and manufacturing premium photopolymers for SLA, DLP and LCD technologies. Our high-end polymers are suitable for a wide range of industries including prototyping, industrial, entertainment, consumer goods, healthcare, aviation and automotive.

Endless Possibilities

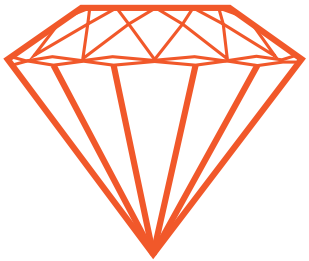
We offer solutions to re-brand our current product portfolio into any shape. This could be a turn-key solution to simply attach your own label on our products or we can provide our photopolymers in bulk volumes.

Unique Product Development

We offer several possibilities to develop custom made 3D resins. Our chemists can create photopolymers with different colors and different polymeric properties. In addition, we offer support to 3D-printer manufacturers with the development of photopolymers with specific polymerization kinetics in order to work on any resin 3D-printer.

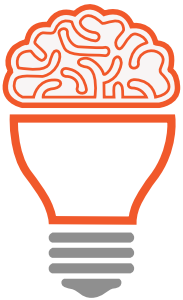


WHAT WE STAND FOR



Quality

One of our main goals is to supply high quality products.
All our products are thoroughly tested on their specific features and print quality.



Knowledge

Our team consists of experts with extended knowledge in photopolymers and 3D-printing techniques. We are looking forward to support your 3D-print projects.

Variety

We offer a wide range of products which are easy to use. In addition, we are constantly developing new resins to support even the highest demanding applications.

Genuine

We believe in open and honest communication to establish long-term partnerships. We support this by our knowledge, products and clear documentation.

LIQCREATE

CATEGORIES

General Purpose

Our range of general purpose resins are ideal for prototyping, entertainment and consumer applications. All resins are easy to use and have the best costs/quality performance in the market.

Premium

Liqcreate Premium resins are uniquely formulated opaque, low odor and low shrinkage resins, ideal for LCD and low-power DLP 3D-printers. These resins enable fast printing on these type of printers due to their high reactivity.

Engineering

Liqcreate Engineering resins are ideal for applications that require specific mechanical properties. This catagory contains our most advanced photopolymers, from high impact materials to the strongest polymers in the market.

Biocompatible & Dental

Liqcreate Biocompatible resins are tested according to specific ISO standards for biocompatibility. Liqcreate Dental resins are ideal for applications that are required in the dental field. All our dental & biocompatible resins are developed in collaboration with (dental) experts in order to meet the industry standards.

Creative

Need a 4th dimension in your 3D-print?
Our range of creative resins is ideal to create this extra dimension. Think about the endless options when you can add visual effects, scent, texture or sound to your 3D-print!

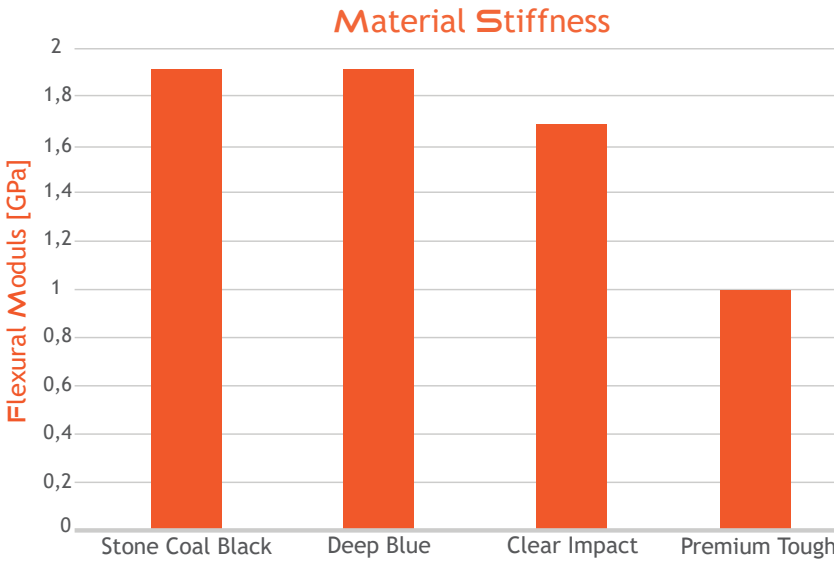
The most reliable resins for 3D printing

LIQCREATE

STONE COAL BLACK

Liqcreate Stone Coal Black is an opaque high resolution general purpose photopolymer for SLA and DLP technologies in the range of 385 – 405nm. Printed parts have an incredibly smooth surface finish which highlights the smallest details.

Its rigid character makes this material perfectly suitable for rapid prototyping and product development in a wide variety of industries.



Key Benefits

- Smooth surface finish
- High accuracy
- Low odor
- Low shrinkage
- Opaque resin

POLYMER PROPERTIES STONE COAL BLACK

Liqcreate Stone Coal Black is a rigid polymer, ideal for a wide variety of applications. The following table contains information about the properties of this specific resin.

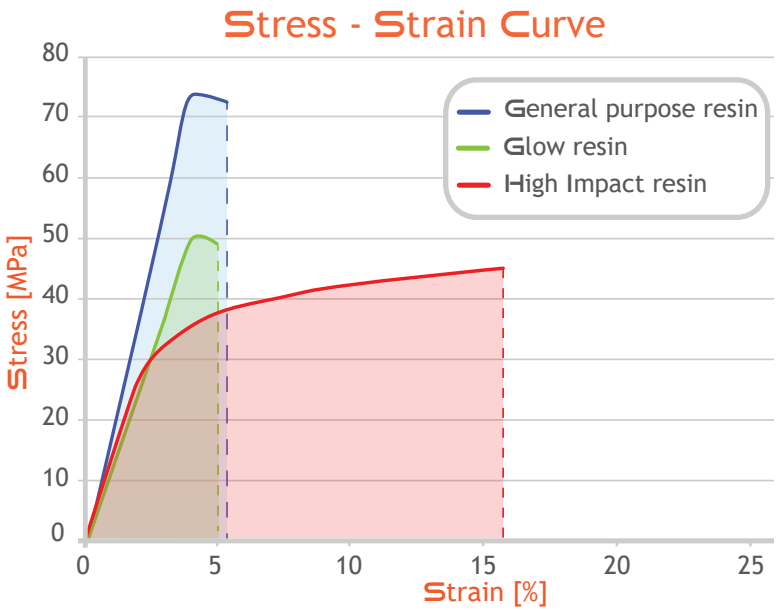
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	62 MPa	9.0 ksi
Tensile Modulus	D638M	2.2 GPa	319 ksi
Elongation at break	D638M	4%	4%
Flexural Strength	D790M	75 MPa	10.9 ksi
Flexural modulus	D790M	1.9 GPa	276 ksi
IZOD Impact (notched)	D256A	15 J/m	0.28 ft-lb/in
Shore D Hardness	D2240	80	80
Water sorption	D570-98	0.3%	0.3%
Tg	D7028	54°C	130°F

[1] Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

DEEP BLUE

Liqcreate Deep Blue is a general purpose photopolymer. Parts created with this resin have a rigid character, low shrinkage and high shape retention which makes this material perfect for the production of functional prototypes plus parts that come in contact with chemicals.

The aesthetically pleasing blue color, low odor and overall properties results in a material perfect for rapid manufacturing and prototyping in the prosumer market.



Key Benefits

- Smooth surface finish
- High accuracy
- Good chemical resistants
- Low shrinkage
- Translucent resin

POLYMER PROPERTIES DEEP BLUE

Liqcreate Deep Blue is a rigid polymer, ideal for a wide variety of applications. The following table contains information about the properties of this specific resin.

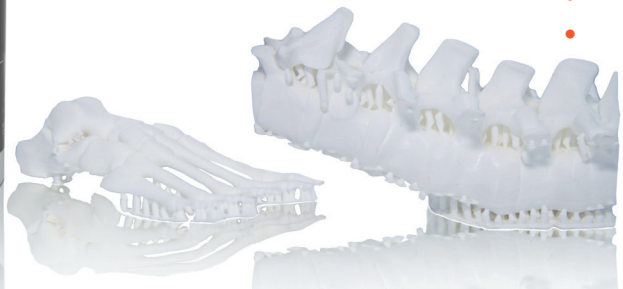
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	73 MPa	10.6 ksi
Tensile Modulus	D638M	2.6 GPa	377 ksi
Elongation at break	D638M	5%	5%
Flexural Strength	D790M	82 MPa	11.9 ksi
Flexural modulus	D790M	1.9 GPa	276 ksi
IZOD Impact (notched)	D256A	22 J/m	0.41 ft-lb/in
Shore D Hardness	D2240	81	81
Water sorption	D570-98	0.26%	0.26%
Tg	D7028	55°C	131°F

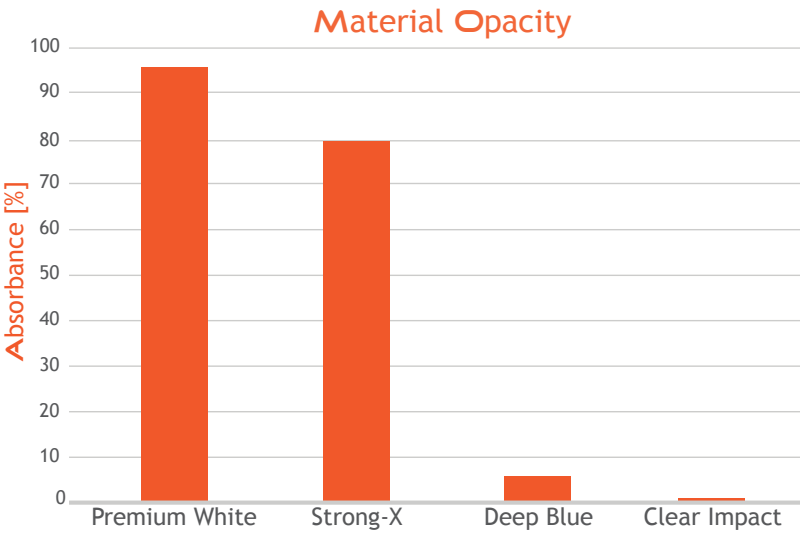
[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

PREMIUM WHITE

Liqcreate Premium White is an opaque white photopolymer with excellent UV-stability, which is ideal for medical and architectural scale models. Printed parts do not discolor and stay white, even after long-term UV exposure. Liqcreate Premium White is easy to use on all open source LCD and DLP 3D-printers in the range of 385 – 420nm.

All Liqcreate resins do not emit unpleasant odor, which enables in-office production.





Key Benefits

- Fast printing with LCD/DLP
- Opaque white color
- Non-yellowing
- Low odor

POLYMER PROPERTIES PREMIUM WHITE

Liqcreate Premium White is a rigid polymer, ideal for a wide variety of applications and designed for LCD and DLP 3D-printers. The following table contains information about the properties of this specific resin.

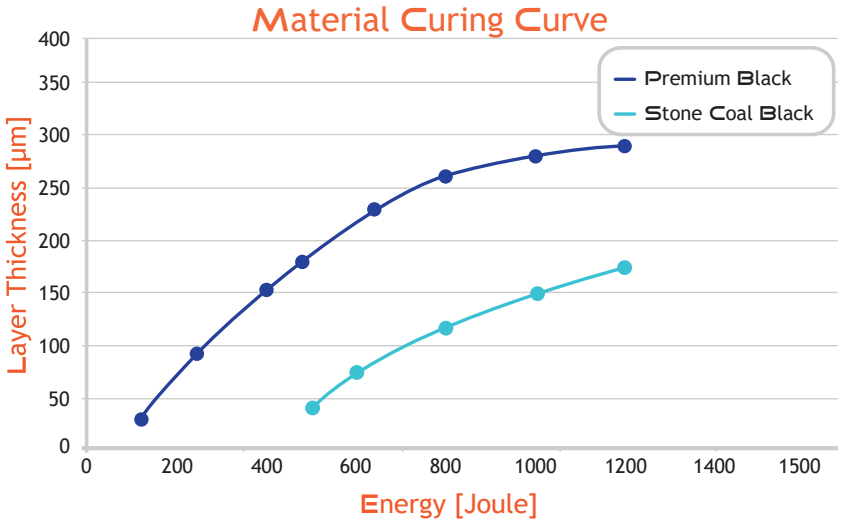
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	45 MPa	6.5 ksi
Tensile Modulus	D638M	1.0 GPa	145 ksi
Elongation at break	D638M	8%	8%
Flexural Strength	D790M	66 MPa	9.6 ksi
Flexural modulus	D790M	1.8 GPa	261 ksi
IZOD Impact (notched)	D256A	18 J/m	0.30 ft-lb/in
Shore D Hardness	D2240	82	82
Water sorption	D570-98	0.4%	0.4%
Tg	D7028	51°C	124°F

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

PREMIUM BLACK

Liqcreate Premium Black is an opaque black photopolymer with excellent color stability. 3D-printed parts from this material have exceptional dimensional stability and low shrinkage during printing. Liqcreate Premium Black is easy to use on all open source LCD and DLP 3D-printers in the range of 385 – 420nm.

This material has excellent properties like low shrinkage and low odor, which makes it ideal for applications that require an opaque, deep black surface finish.



Key Benefits

- Fast printing with LCD/DLP
- Opaque black color
- Low shrinkage
- Low odor

POLYMER PROPERTIES PREMIUM BLACK

Liqcreate Premium Black is a rigid polymer, ideal for a wide variety of applications and designed for LCD and DLP 3D-printers. The following table contains information about the properties of this specific resin.

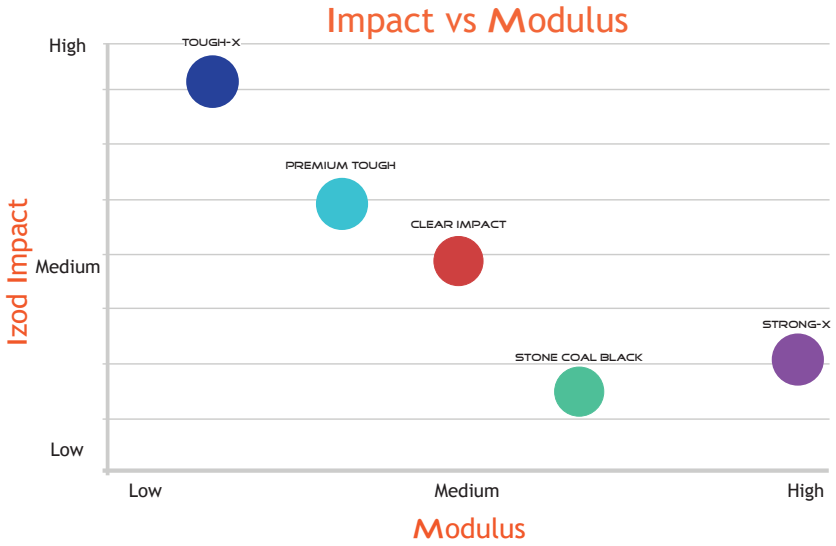
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	46 MPa	6.7 ksi
Tensile Modulus	D638M	1.1 GPa	160 ksi
Elongation at break	D638M	8%	8%
Flexural Strength	D790M	68 MPa	9.9 ksi
Flexural modulus	D790M	1.8 GPa	276 ksi
IZOD Impact (notched)	D256A	17 J/m	0.29 ft-lb/in
Shore D Hardness	D2240	83	83
Water sorption	D570-98	0.4%	0.4%
Tg	D7028	51°C	124°F

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

PREMIUM TOUGH

Liqcreate Premium Tough is a transparent resin which turns into a beautiful milky white polymer during polymerization. 3D-printed parts from this material are durable. Liqcreate Premium Tough is easy to use on all open source DLP and LCD 3D-printers in the range of 385 – 420nm.

The high impact strength and scratch resistance of Liqcreate Premium Tough makes it perfect for the functional prototypes.



Key Benefits

- High impact strength
- Exceptional scratch resistance
- Durable
- MSLA Compatible

POLYMER PROPERTIES PREMIUM TOUGH

Liqcreate Premium Tough is a high impact polymer, ideal for the production of functional parts which are exposed to stress. The following table contains information about the properties of this specific resin.

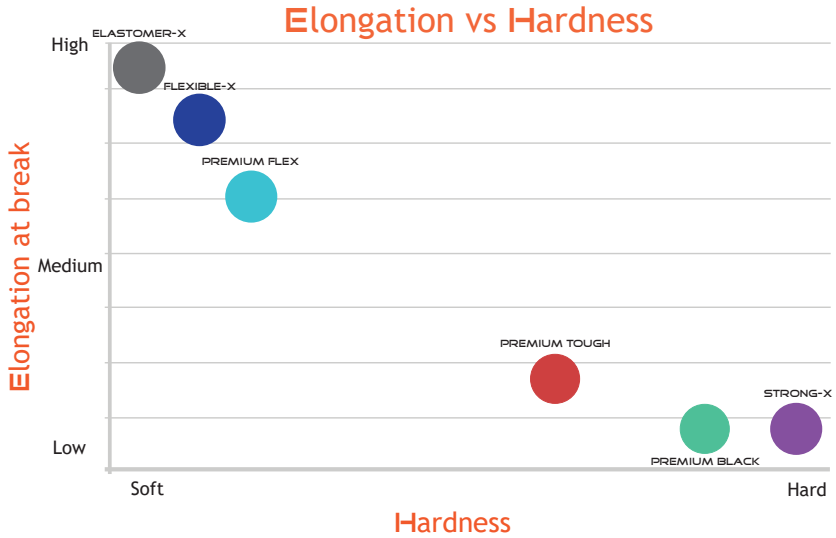
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	28 MPa	4.0 ksi
Tensile Modulus	D638M	1.0 GPa	145 ksi
Elongation at break	D638M	15-25%	15-25%
Flexural Strength	D790M	38 MPa (no break)	5.5 ksi (no break)
Flexural modulus	D790M	1.0 GPa	145 ksi
IZOD Impact (notched)	D256A	40 J/m	0.81 ft-lb/in
Shore D Hardness	D2240	69	69
Water sorption	D570-98	0.6%	0.6%

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

PREMIUM FLEX

Liqcreate Premium Flex is a translucent turquoise blue photopolymer with great processability and print speed on MSLA and DLP based 3D-printers. 3D-printed parts from this material have excellent flexibility and low surface hardness of 63 Shore A. Liqcreate Premium Flex is easy to use on all open source DLP and LCD 3D-printers in the range of 385 – 420nm.

Its high elongation and low Shore A hardness makes it perfect for diversity of soft touch and elastic prototypes.



Key Benefits

- High flexibility
- Soft touch
- Good rebound
- MSLA Compatible

POLYMER PROPERTIES PREMIUM FLEX

Liqcreate Premium Flex is a flexible and soft polymer, ideal for elastic prototypes. The following table contains information about the properties of this specific resin.

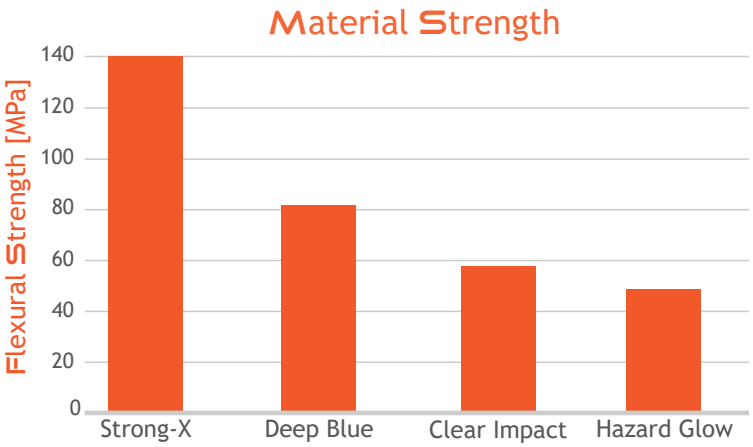
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	1.7 MPa	0.25 ksi
Tear strength	D624	4.3 kN/m	25 lbf/in
Elongation at break	D638M	50-80%	50-80%
Shore A Hardness	D2240	63	63
Rebound resilience	ISO 4662	33%	33%
Water sorption	D570-98	1.6%	1.6%

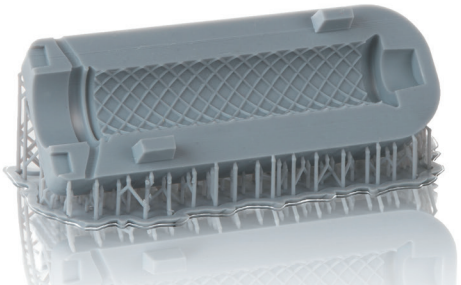
[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

STRONG-X

Liqcreate Strong-X is one of the strongest materials available in the market. Its flexural strength of 140MPa is comparable to industry's leading dual-cure cyanate ester resins, which makes it excellent for heavy duty applications.

Strong-X is easy to use on all open source SLA and DLP 3D-printers in the range of 385 – 405nm and only requires UV post-curing. This material has the characteristics of high strength, high stiffness and high temperature resistance which makes it suitable for injection molding and engineering parts.





Key Benefits

- High strength
- High temperature resistance
- Low shrinkage
- Low odor

POLYMER PROPERTIES STRONG-X

Liqcreate Strong-X is an extremely strong polymer ideal for heavy duty, injection molding and engineering applications. The following table contains information about the properties of this specific resin.

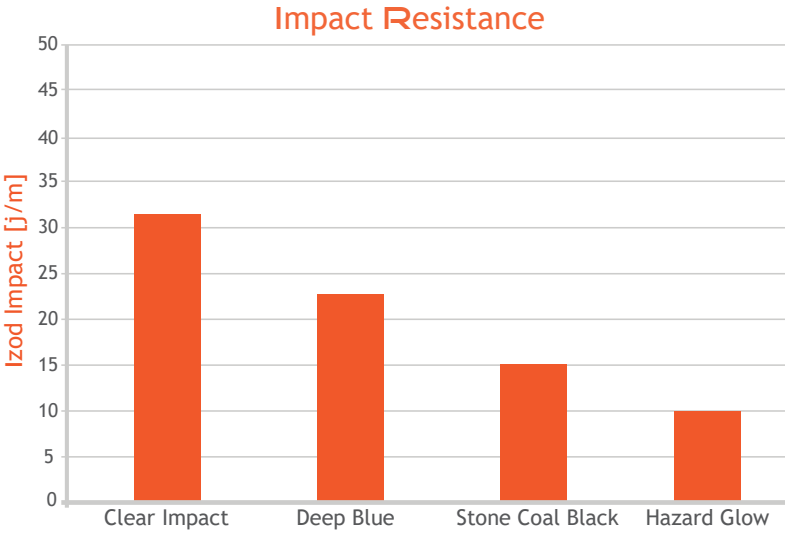
Description	ASTM Method	High power LED curing 30 minutes at 60°C Metric[1]	High power LED curing 120 minutes at 60°C Metric[1]
Tensile Strength	D638M	52 - 70 MPa	60 - 84 MPa
Tensile Modulus	D638M	2.9 - 3.2 GPa	3.1 - 3.4 GPa
Elongation at break	D638M	4 - 8%	3 - 6%
Flexural Strength	D790M	121 - 130 MPa	134 - 140 MPa
Flexural modulus	D790M	3.1 - 3.3 GPa	3.3 - 3.5 GPa
IZOD Impact (notched)	D256A	20 J/m	17 J/m
Shore D Hardness	D2240	87	90
Water sorption	D570-98	0.45%	0.39%
Tg	D7028	n/a	128°C

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

CLEAR IMPACT

Liqcreate Clear Impact is an optically clear photopolymer for SLA and DLP technologies in the range of 385 - 405nm. Parts created with Liqcreate Clear Impact are perfectly transparent, slightly flexible and have an excellent impact resistance.

The toughness of this material makes it ideal for the production of functional parts which are repeatedly exposed to stress. Low water absorption and weather resistance makes it perfect for outdoor applications.



Key Benefits

- Optically clear
- Excellent impact resistance
- Good water and chemical resistance
- Low discoloration

POLYMER PROPERTIES CLEAR IMPACT

Liqcreate Clear Impact is a high impact polymer, ideal for the production of functional parts which are repeatedly exposed to stress. The following table contains information about the properties of this specific resin.

Description	ASTM Method	30 minutes high power LED curing at 60°C Metric[1]	30 minutes high power LED curing at 60°C Imperial[1]
Tensile Strength	D638M	47 MPa	6.8 ksi
Tensile Modulus	D638M	1.4 GPa	203 ksi
Elongation at break	D638M	15-25%	15-25%
Flexural Strength	D790M	58 MPa	8.4 ksi
Flexural modulus	D790M	1.7 GPa	247 ksi
IZOD Impact (notched)	D256A	31 J/m	0.58 ft-lb/in
Shore D Hardness	D2240	68	68
Water sorption	D570-98	0.5%	0.5%

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

TOUGH-X

Liqcreate Tough-X is an opaque black photopolymer. 3D-printed parts from this material have exceptional impact strength. Liqcreate Tough-X is easy to use on all open source DLP, LCD and SLA 3D-printers in the range of 385 – 420nm.

This material has excellent properties like high impact strength and up to 150% elongation, making it perfect for the production of industrial spare parts and functional ABS (hard rubber) type products.

Key Benefits

- ABS (hard rubber) like
- Extreme impact resistance
- Durable
- Heavy duty parts

POLYMER PROPERTIES TOUGH-X

Liqcreate Tough-X is a functional high impact polymer, ideal for the production of heavy duty functional parts which are repeatedly exposed to stress. The following table contains information about the properties of this specific resin.

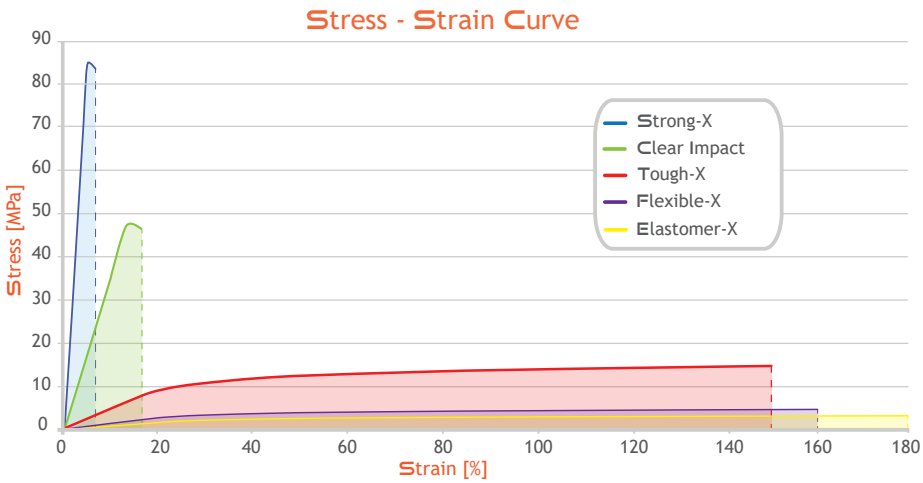
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	15 MPa	2.2 ksi
Tensile Modulus	D638M	n/a	n/a
Elongation at break	D638M	100-150%	100-150%
IZOD Impact (notched)	D256A	72 J/m	1.35 ft-lb/in
Shore A Hardness	D2240	95	95
Shore D Hardness	D2240	60	60
Yield Strength	D638M	8 MPa	1.2 ksi
Water sorption	D570-98	2.1%	2.1%
Tg	D7028	n/a	n/a

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

FLEXIBLE-X

Liqcreate Flexible-X is an opaque black photopolymer with great processability and print speed on MSLA, DLP and laser based 3D-printers. 3D-printed parts from this material have exceptional flexibility and great shock absorption properties.

This material is easy to use on all open source DLP, LCD and SLA 3D-printers in the range of 385 – 420nm. Its low hardness of 55 Shore A and elongation up to 160% makes it perfect for the production of a diversity of industrial applications.



Key Benefits

- High elongation
- Durable soft touch
- Excellent shock absorption
- Good tear strength

POLYMER PROPERTIES FLEXIBLE-X

Liqcreate Flexible-X is an extremely flexible and soft polymer, ideal for functional applications. The following table contains information about the properties of this specific resin.

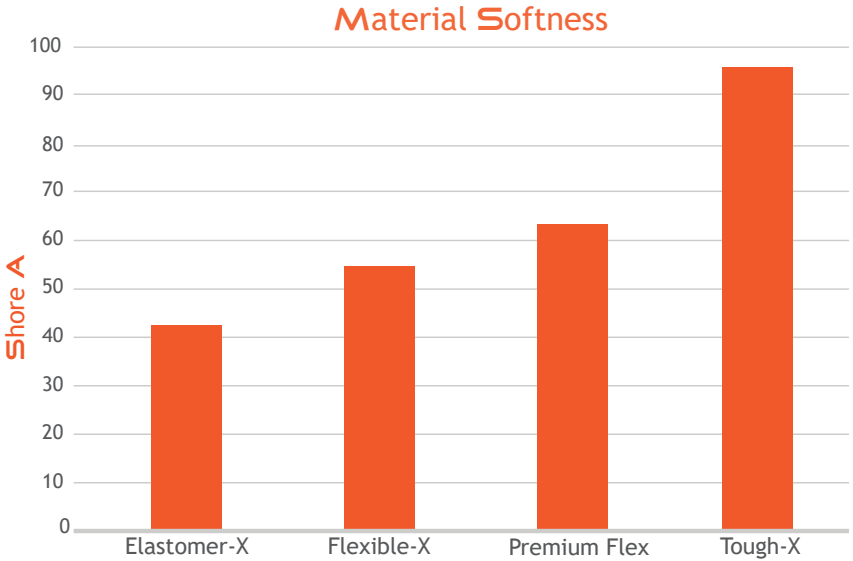
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	2.4 MPa	0.35 ksi
Tear strength	D624	14.9 kN/m	85 lbf/in
Elongation at break	D638M	120-160%	120-160%
Compression set 24 hours at 22˚C	D395	2%	2%
Shore A Hardness	D2240	55	55
Water sorption	D570-98	3.3%	3.3%

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings. 5 minutes LED curing at 20˚C in glycerol or water. Afterwards regular UV LED curing for 30 minutes.

ELASTOMER-X

Liqcreate Elastomer-X is a clear photopolymer resin and can be processed on most resin based 3D-printers. 3D-printed parts from this material are exceptionally soft with a Shore A of 43 and feature great flexibility. The product can be used as received, or colored with almost any commercial available 3D-resin colorant.

Elastomer-X can be used on open DLP, LCD and SLA 3D-printers in the range of 385 - 420nm. Its properties simulate soft TPU and silicone, which makes it perfect for the production digital lattice foams, soft end of arm tooling (EOAT) for robots, grommets, bellows and elastic industrial parts.



Key Benefits

- High elasticity
- Exceptionally soft material
- Excellent elongation
- Ability to color/dye before printing

POLYMER PROPERTIES ELASTOMER-X

Liqcreate Elastomer-X is an elastic, flexible and very soft polymer, ideal for functional applications such as: robotic, lattice foam structures & EOAT. The following table contains information about the properties of this specific resin.

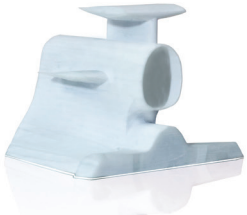
Description	ASTM Method	5 minutes high power LED curing at 20°C in glycerol or water Metric[1]	5 minutes high power LED curing at 20°C in glycerol or water Imperial[1]
Tensile Strength	D638M	1.5 MPa	0.22 ksi
Tear strength	D624	10 - 12 kN/m	10 - 12 kN/m
Elongation at break	D638M	140-180%	140-180%
Shore A Hardness	D2240	43	43
Compression set 24 hours at 22°C	D395	1%	1%
Water sorption	D570-98	1.5%	1.5%
Tg	D7028	-5°C	23°F
Rebound resilience	ISO 4662	8.2%	8.2%
Degradation temperature	Internal method	> 250°C *	> 482°F *

[1] Material properties can vary with part geometry, print orientation, print settings and postcuring settings.
* Discoloration at 140°C, increased rigidity at 220°C - Shore A 54. No cracking in part up to 250°C / 482°F.

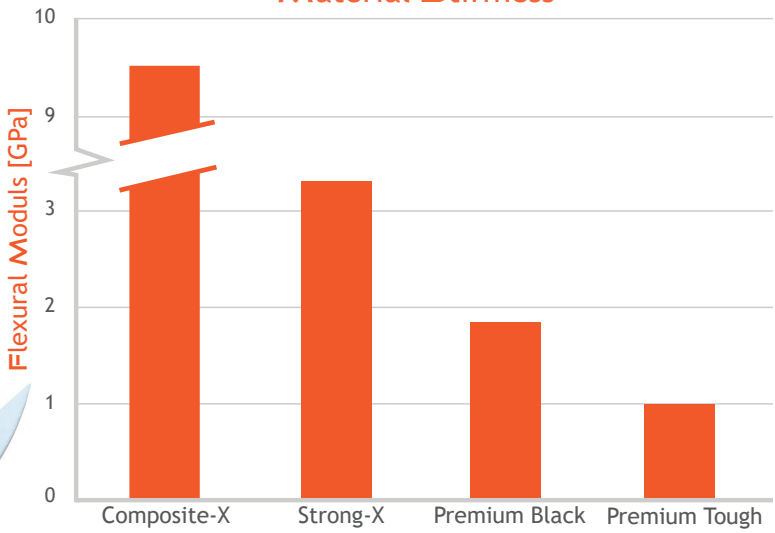
COMPOSITE-X

Liqcreate Composite-X is one of the stiffest and strongest material available in the market. With a flexural modulus of over 9000 MPa and a flexural strength of 150 - 170 MPa it is superior to almost all photopolymer resins currently available. Liqcreate Composite-X is easy to use on all open SLA, DLP and MSLA 3D-printers in the range of 385 - 405nm.

The material can be used after UV-post curing, or the properties can be boosted with a thermal cure. This material has features like excellent chemical resistance, high strength and high stiffness which makes it ideal for wind tunnel testing, fluid flow components, automotive and heavy duty industrial applications.



Material Stiffness



Key Benefits

- High rigidity
- High strength
- Good chemical resistance
- Extremely low shrinkage

POLYMER PROPERTIES COMPOSITE-X

Liqcreate Composite-X is an extremely rigid and high performance reinforced nano-micro composite resin. The following table contains information about the properties of this specific resin.

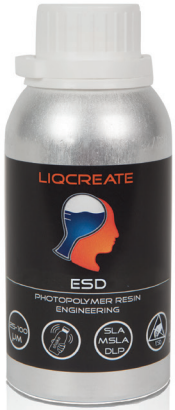
Description	ASTM Method	UV Curing 60 minutes at 60°C[1]	UV & Thermal curing for 2 hours at 100°C[1]
Tensile Strength	D638M	50 - 75 MPa	70 - 85 MPa
Tensile Modulus	D638M	7.5 - 8.5 GPa	8.5 - 9.5 GPa
Elongation at break	D638M	1%	1%
Flexural Strength	D790M	140 - 150 MPa	150 - 170 MPa
Flexural modulus	D790M	7.5 - 8.5 GPa	8.5 - 9.5 GPa
IZOD Impact (notched)	D256A	19 J/m	18 J/m
Shore D Hardness	D2240	93	94
Water sorption	D570-98	0.67%	0.59%
Linear Shrinkage during printing	Internal method	<0.1%	<0.1%
Linear Shrinkage UV-curing	Internal method	0.5%	0.5%
Linear Shrinkage thermal cure	Internal method	0.1%	0.1%
Compression strength	D695	155 MPa	160 MPa
Density solid	Internal method	1.62 g/cm^3	1.62 g/cm^3

[1]Parts were UV post-cured in a Wicked Engineering Curebox for 60 minutes at 60°C prior to testing. Thermal cured parts were cured for 2 hours at 100°C in an conventional oven after being UV-cured. Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

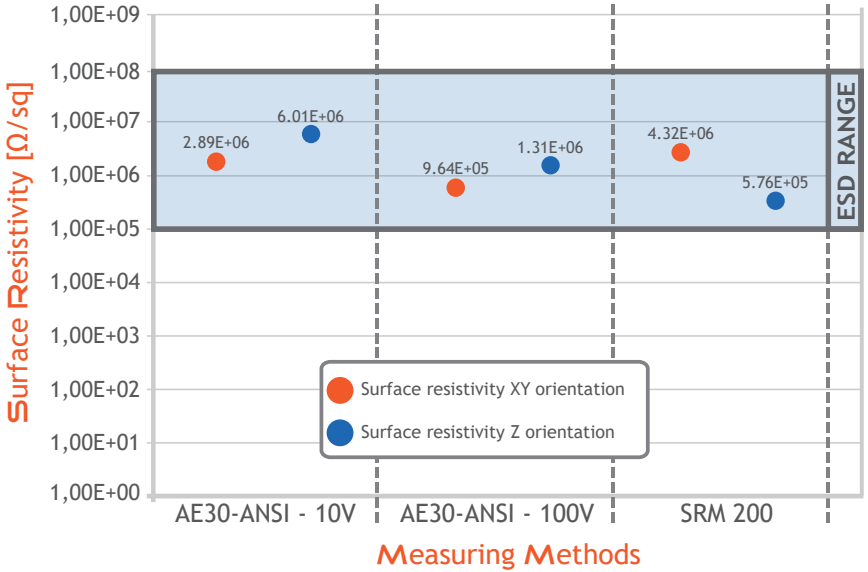
ESD

Liqcreate ESD is an opaque black photopolymer resin and can be processed on most resin based 3D-printers. 3D-printed parts from this material exhibit electrostatic discharge properties needed for electronic manufacturing and parts for ESD-safe workplaces (EPA).

Liqcreate ESD can be used on open DLP, LCD and SLA 3D-printers in the range of 385 – 420nm. Due to the isotropic electrostatic dissipative properties, it is suitable for electronic devices and components that require ESD. Reduce risk and increase manufacturing capabilities by printing custom jigs, fixtures and tools to protect critical electronics components from static discharge.



ESD PROPERTIES



Key Benefits

- Isotropic ESD properties
- Easy to print
- Antistatic properties
- Well balanced rigidity and impact

POLYMER PROPERTIES ESD

Liqcreate ESD is a resin that exhibit electrostatic discharge properties needed for electronic manufacturing and printing components for ESD-safe workplaces. The following table contains information about the properties of this specific resin.

Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	37 MPa	5.37 ksi
Tensile Modulus	D638M	1.9 GPa	276 ksi
Elongation at break	D638M	5-10%	5-10%
Flexural Strength	D790M	83 MPa	12.04 ksi
Flexural modulus	D790M	2.1 GPa	305 ksi
IZOD Impact (notched)	D256	30 J/m	0.47 ft-lb/in
Shore D Hardness	D2240	82	82
Water sorption	D570-98	3.84%	3.84%
Degradation temperature	Internal method	> 250°C*	> 482°F*
HDT-B 0.45 MPa	ISO 75	51°C	124°F
HDT-A 1.80 MPa	ISO 75	43°C	109°F
Surface resistivity	AE30-ANSI	10^5 - 10^7 Ω/sq	10^5 - 10^7 Ω-sq
Volume resistivity	AE30-ANSI	10^5 - 10^7 Ω-cm	10^5 - 10^7 Ω-cm

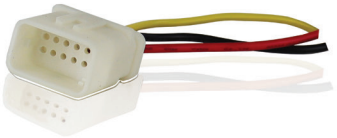
[1]Parts were UV post-cured in a Wicked Engineering Curebox for 30 minutes at 60°C prior to testing. Values may vary and depend on individual machine processing and post-curing.
*Material will soften above HDT value but not break/crack up to 250°C without force on the part.

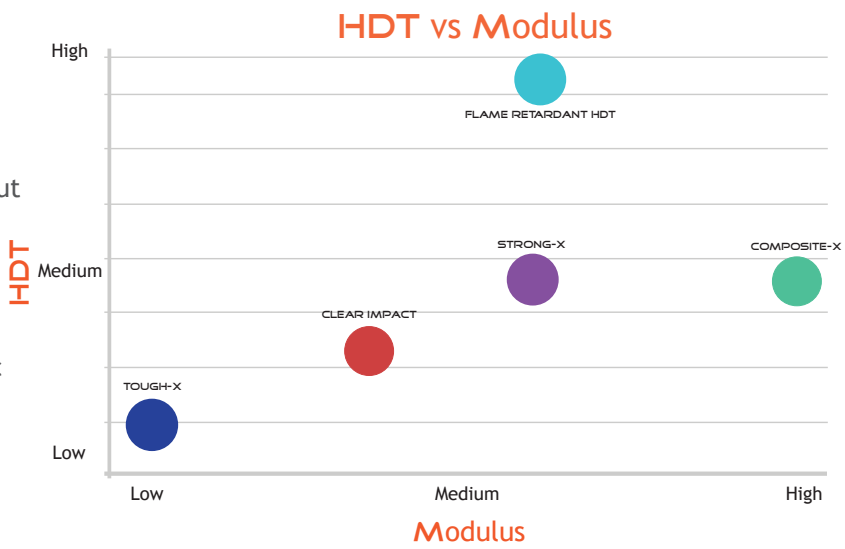
LIQCREATE

FLAME RETARDANT HDT

Liqcreate Flame Retardant HDT is a rigid off-white photopolymer resin and can be processed on most open resin based 3D-printers. 3D-printed parts from this material can withstand high temperatures without posing a fire hazard due to its self-extinguishing capabilities.

This material is perfect for creating parts that need to comply with UL94 V0 test standards. For example: interior parts in cars, airplanes, trains and electronic devices. In addition, it can be excellent for tooling manufacturing aids, connector housings and covers.





Key Benefits

- Self-extinguishing, V0 at 3mm
- High temperature resistance
- Extreme rigid
- Easy processing

POLYMER PROPERTIES FLAME RETARDANT HDT

Liqcreate Flame Retardant HDT is a resin that can handle high temperatures and has self-extinguishing capabilities. The following table contains information about the properties of this specific resin.

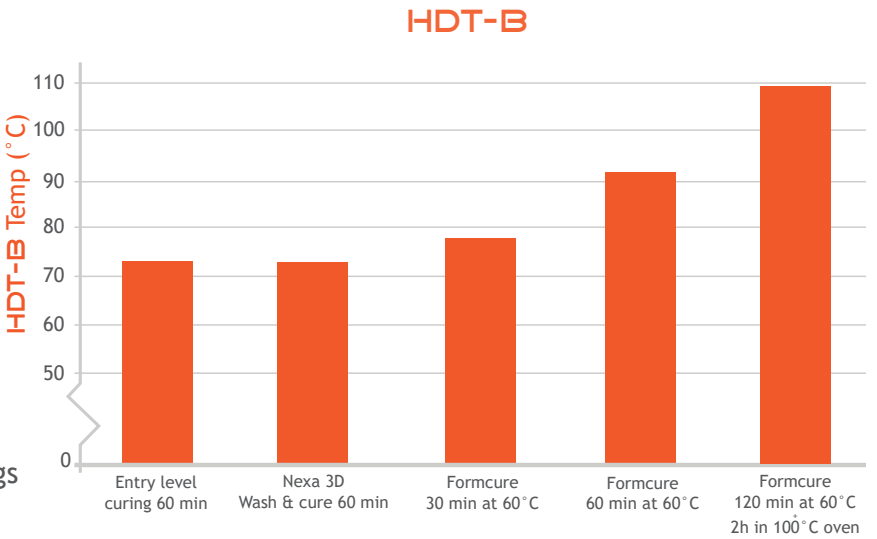
Description	ASTM Method	High power LED curing 60 minutes at 60°C Metric[1]	High power LED curing 120 minutes at 60°C Metric[1]
Tensile Strength	D638M	41 MPa	43 MPa
Tensile Modulus	D638M	4.2 GPa	4.2 GPa
Elongation at break	D638M	1 - 3%	1 - 3%
Flexural Strength	D790M	73 MPa	67 MPa
Flexural modulus	D790M	4.3 GPa	4.4 GPa
IZOD Impact (notched)	D256	13 J/m	13 J/m
IZOD Impact (notched)	ISO180	1.74 kJ/m^2	1.85 kJ/m^2
Shore D Hardness	D2240	88	89
Water sorption	D570-98	0.41%	0.41%
Degradation temperature	Internal method	>250°C[2]/482°F[2]	>250°C[2]/482°F[2]
HDT-B 0.45 MPa	ISO75	237°C/459°F	257°C/459°F
HDT-A 1.80 MPa	ISO75	137°C/279°F	145°C/293°F
Flamability	UL94 V0	3mm	3mm
FAR 25.853 Appendix F, Part I (a) (1) (ii)12 seconds Vertical Burn	Internal method	1.5mm	1.5mm

[1]Post-cured 60 minutes or 120 minutes with high power LED curing at 60°C in the Wicked Engineering curebox. Values and material properties may vary and depend on individual machine processing, part geometry, print orientation, print settings and post-curing settings.
[2]discoloration Above 200°C.

RIGID PRO

Liqcreate Rigid Pro is a rigid black photopolymer resin and can be processed on most open DLP, MSLA and laser based 3D-printers operating at a wavelength of 385-405nm. 3D-printed parts from this material exhibit high strength and rigidity. Liqcreate Rigid Pro only requires UV post-curing with heat to reach its optimal strength.

This material has excellent features like: high stiffness, durability, high strength and good temperature resistance which makes it ideal for molding, and industrial applications like pulleys, automotive connectors, covers, brackets, housings and demanding engineering parts.



Key Benefits

- High strength
- Good chemical stability
- Dimensional stable
- Good temperature resistance

POLYMER PROPERTIES RIGID PRO

Liqcreate Rigid Pro is a rigid strong black photopolymer, ideal for functional applications such as: manufacturing aids, covers and demanding engineering parts. The following table contains information about the properties of this specific resin.

Description	ASTM Method	High power LED curing 30 minutes at 60°C Metric[1]	High power LED curing 120 minutes at 60°C Metric[1]
Tensile Strength	D638M	52 – 70 MPa	60 – 84 MPa
Tensile modulus	D638M	2.6 – 2.8 GPa	3.0 – 3.2 GPa
Elongation at break	D638M	4 - 8%	3 - 6%
Shore D Hardness	D2240	87	90
Flexural strength	D790	100 - 110 MPa	110 - 130 MPa
Flexural modulus	D790	2.8 – 3.0 GPa	3.0 – 3.3 GPa
IZOD Impact notched	D256	21 J/m	18 J/m
IZOD Impact notched	ISO 180	2.5 kJ/m^2	2.3 kJ/m^2
Water sorption	D570-98	0.46%	0.40%
HDT-B 0.45 MPa	ISO75	77°C	91°C
HDT-A 1.80 MPa	ISO75	65°C	75°C

[1] Post-cured in the Formlabs Formcure. These values may vary and depend on individual machine processing and post-curing.

WAX CASTABLE

Liqcreate Wax Castable is a blue wax-based photopolymer with reliable processability and accuracy on LCD/MSLA, DLP and laser based 3D-printers. 3D-printed parts from this material captures intricate features and show crisp details. This wax-based material offers smooth surfaces with clean burnout for a reliable casting process.

Create custom made elegant organic geometries with positive and negative engravings according to your preferences. Liqcreate Wax Castable creates perfect casting patterns for jewelry, dental and industrial parts.

Key Benefits

- High precision
- Wax-based
- Clean & ash free burnout
- Excellent casting of engravings

POLYMER PROPERTIES WAX CASTABLE

Liqcreate Wax Castable is a wax-based polymer, ideal for casting applications. The following table contains information about the properties of this specific resin.

Description	ASTM Method	Metric[1]	Imperial[1]
Shore D Hardness	D2240	77	77
Flexural Strength	D790M	33 MPa	4.8 ksi
Flexural modulus	D790M	1.1 GPa	160 ksi
Water sorption	D570-98	0.28%	0.28%

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

PREMIUM MODEL

Liqcreate Premium Model is a matt, opaque skin/peach colored photopolymer. Its matt color accentuates depth and detail in your dental models, which accommodates a perfect view on undercuts in 3D-printed models.

3D-printed parts from this material have good dimensional stability and is excellent for aligner and orthodontic models. Liqcreate Premium Model is easy to use on all open source LCD and DLP 3D-printers in the range of 385 – 420nm.

Key Benefits

- Fast printing with LCD/DLP
- Dimensional stable
- Great accuracy
- Temperature resistant for aligner production

POLYMER PROPERTIES PREMIUM MODEL

Liqcreate Premium Model is a rigid polymer, ideal for dental and medical model applications and designed for LCD and DLP 3D-printers. The following table contains information about the properties of this specific resin.

Description	ASTM Method	30 minutes high power LED curing at 40°C Metric[1]	30 minutes high power LED curing at 40°C Imperial[1]
Tensile Strength	D638M	53 MPa	7.69 ksi
Tensile Modulus	D638M	1.9 GPa	276 ksi
Elongation at break	D638M	4.1%	4.1%
Flexural Strength	D790M	80 MPa	11.6 ksi
Flexural modulus	D790M	2.1 GPa	305 ksi
IZOD Impact (notched)	D256A	17 J/m	0.29 ft-lb/in
Shore D Hardness	D2240	83	83
Water sorption	D570-98	0.4%	0.4%
Linear shrinkage during printing	Internal method	0.5%	0.5%
Linear shrinkage during UV-curing	Internal method	0.5%	0.5%

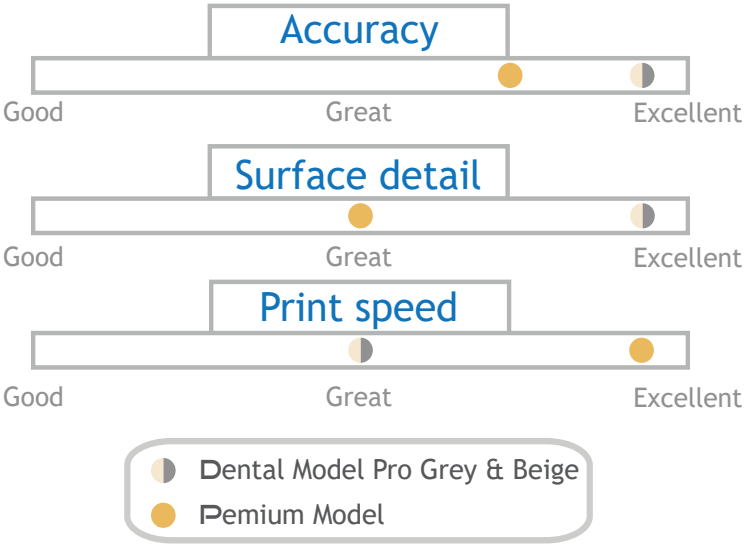
[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings. Liqcreate Premium Model is not tested on biocompatibility, therefore the material should not be used for applications inside the human body.

DENTAL MODEL PRO BEIGE

Liqcreate Dental Model Pro Beige is a matt, opaque beige colored photopolymer. Its matt surface finish accentuates depth and detail in dental models, which accommodates a perfect view on undercuts and other important markers. In addition, 3D-printed models from Dental Model Pro Beige are excellent for crown & bridge build-ups. 3D-printed parts from this material have exceptional dimensional stability and extremely low shrinkage during printing.

Liqcreate Dental Model Pro Beige is easy to use on all open source SLA, MSLA and DLP 3D-printers in the range of 385 – 420nm. This material has excellent properties like low shrinkage, low odor, high accuracy and dimensional stability, making it perfect for the production of dental models, C&B, thermoforming and aligner models.

Dental Model Comparison



Key Benefits

- Excellent dimensional stability
- High detail & matt surface
- Extremely low shrinkage
- Low odor

POLYMER PROPERTIES DENTAL MODEL PRO BEIGE

Liqcreate Dental Model Pro Beige is a rigid & high accuracy polymer, ideal for dental model applications and designed for SLA, MSLA and DLP 3D-printers.

Description	ASTM Method	30 minutes high power LED curing at 40°C Metric[1]	30 minutes high power LED curing at 40°C Imperial[1]
Tensile Strength	D638M	37 MPa	5.4 ksi
Tensile Modulus	D638M	1.9 GPa	276 ksi
Elongation at break	D638M	4.8%	4.8%
Flexural Strength	D790M	64 MPa	9.3 ksi
Flexural modulus	D790M	1.7 GPa	247 ksi
Shore D Hardness	D2240	85	85
Water sorption	D570-98	0.37%	0.37%
Linear Shrinkage during printing	Internal method	0.3%	0.3%
Linear Shrinkage UV-curing	Internal method	0.4%	0.4%

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings. Liqcreate Dental Model Pro Beige is not tested on biocompatibility, therefore the material should not be used for applications inside the human body.

LIQCREATE

DENTAL MODEL PRO GREY

Liqcreate Dental Model Pro Grey is a matt, opaque grey colored photopolymer. Its matt surface finish accentuates depth and detail in dental models, which accommodates a perfect view on undercuts and the surface is ideal for scan impressions. 3D-printed parts from this material have exceptional dimensional stability and low shrinkage during printing.

Liqcreate Dental Model Pro Grey is easy to use on all open source SLA, MSLA and DLP 3D-printers in the range of 385 – 420nm. This material has excellent properties like low shrinkage, low odor, high accuracy and dimensional stability, making it perfect for the production of dental models, C&B, thermoforming and aligner models.

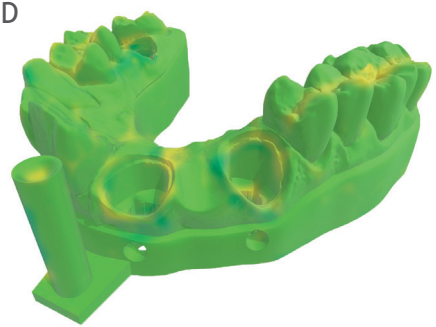
Accuracy Evaluation

The accuracy evaluation demonstrates that the tolerances of the tested model were 93% within 50 microns.

Accuracy of print to 3D model file

+/- 50 microns

+/- 75 microns



Key Benefits

- Excellent dimensional stability
- High detail & matt surface
- Extremely low shrinkage
- Low odor

POLYMER PROPERTIES DENTAL MODEL PRO GREY

Liqcreate Dental Model Pro Grey is a rigid & high accuracy polymer, ideal for dental model applications and designed for SLA, MSLA and DLP 3D-printers.

Description	ASTM Method	30 minutes high power LED curing at 40 °C Metric[1]	30 minutes high power LED curing at 40 °C Imperial[1]
Tensile Strength	D638M	49 MPa	7.1 ksi
Tensile Modulus	D638M	2.3 GPa	334 ksi
Elongation at break	D638M	4.1%	4.1%
Flexural Strength	D790M	89 MPa	12.9 ksi
Flexural modulus	D790M	2.4 GPa	348 ksi
Shore D Hardness	D2240	85	85
Water sorption	D570-98	0.45%	0.45%
Linear Shrinkage during printing	Internal method	0.3%	0.3%
Linear Shrinkage UV-curing	Internal method	0.4%	0.4%

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings. Liqcreate Dental Model Pro Grey is not tested on biocompatibility, therefore the material should not be used for applications inside the human body.

LIQCREATE

GINGIVA MASK

Liqcreate Gingiva Mask is a pink colored photopolymer. It is a soft and flexible material that can be used in combination with Liqcreate Dental Model Pro Beige or Grey material.

Gingiva Mask opens the possibility to create the soft part for highly precise models, bridges and implant superstructures. Liqcreate Gingiva Mask is easy to use on open MSLA/LCD, DLP and SLA 3D-printers in the range of 385 – 420nm. With its soft and flexible properties, it is perfect for the production of gum parts for dental implant models and C&B projects.

Key Benefits

- Soft touch
- Easy to use
- Gum look
- Good flexibility

POLYMER PROPERTIES GINGIVA MASK

Liqcreate Gingiva Mask is a flexible and soft polymer, ideal for dental applications and designed for SLA, MSLA and DLP 3D-printers.

Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	2.2 MPa	0.31 ksi
Tensile Modulus	D638M	11.9 MPa	1.73 ksi
Elongation at break	D638M	80-120%	80-120%
Shore A Hardness	D2240	64	64
Water sorption	D570-98	14.8%	14.8%

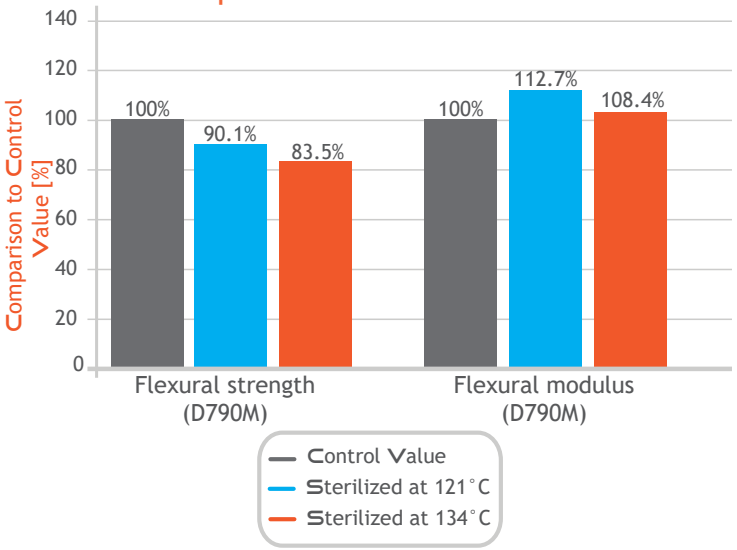
[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings. 5 minutes LED curing at 20°C in glycerol or water. Afterwards regular UV LED curing for 30 minutes. Liqcreate Gingiva Mask is not tested on biocompatibility, therefore the material should not be used for applications inside the human body.

BIO-MED CLEAR

Liqcreate Bio-Med Clear is a rigid clear photopolymer resin and can be processed on most resin based 3D-printers. 3D-printed parts from this material exhibit biocompatible properties when post-cured according to the manufacturers guidelines[3].

After washing and post-curing[3], printed parts from Liqcreate Bio-Med Clear are capable to pass the biocompatibility tests of: Cytotoxicity (ISO 10993-5:2009), Sensitization (ISO 10993-10:2021) and Irritation (ISO 10993-23:2021). Printed parts from Bio-Med Clear can be disinfected with commonly used disinfectants or sterilized by steam sterilization.

Comparison After Sterilization



Key Benefits

- Biocompatible
- Autoclavable
- High accuracy
- Dimensional stable

POLYMER PROPERTIES BIO-MED CLEAR

Liqcreate Bio-Med Clear is perfect for applications that require non-cytotoxic, non-sensitation and non-irritation properties. The following table contains information about the mechanical properties of this specific resin.

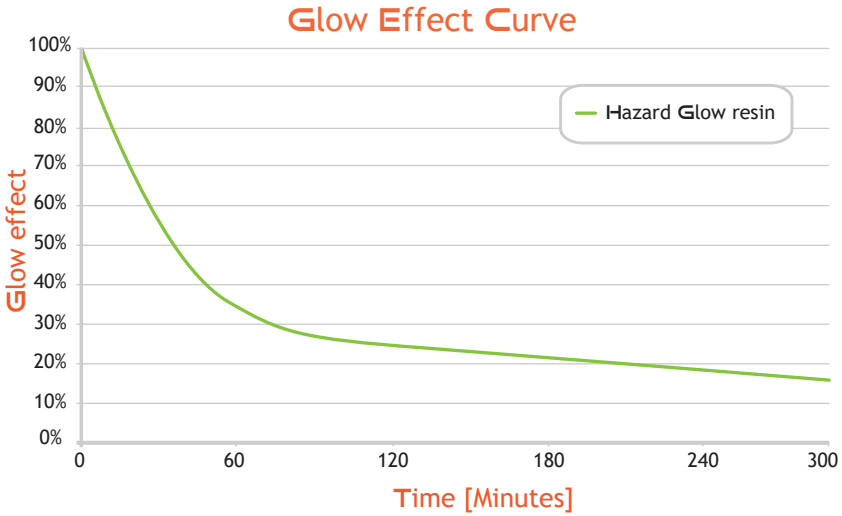
Description	ASTM Method	Metric[3]	Imperial[3]
Tensile Strength	D638M	55 MPa	8.00 ksi
Tensile Modulus	D638M	2.0 GPa	290 ksi
Elongation at break	D638M	5-10%	5-10%
Flexural Strength	D790M	89 MPa	12.91 ksi
Flexural modulus	D790M	2.2 GPa	319 ksi
IZOD Impact (notched)	D256	28 J/m	0.53 ft-lb/in
Shore D Hardness	D2240	85	85
Water sorption	D570-98	0.54%	0.54%
Degradation temperature	Internal method	> 250°C[4]	> 482°F[4]
HDT-B 0.45 MPa	ISO 75	62°C	124°F
HDT-A 1.80 MPa	ISO 75	48°C	109°F
Cytotoxicity	ISO 10993-5:2009	Comply	Comply
Sensitization	ISO 10993-10:2021	Comply	Comply
Irritation	ISO 10993-23:2021	Comply	Comply

[3] Post-cured 30 minutes with high power LED curing at 60°C in the Wicked Engineering curebox. Material properties can vary with part geometry, print orientation, print settings and postcuring settings. Aways follow the recommend post-curing workflow from the manufacturer to ensure biocompatibility.
[4] Material will soften above HDT value but not break/crack up to 250°C without force on the part, discoloration takes place above 180°C.

HAZARD GLOW

Liqcreate Hazard Glow is the first ever glow-in-the-dark material for SLA and DLP technologies in a range of 385 – 405nm. This material is optimized in having the highest possible glow-effect while remaining easy processable in DLP and SLA 3D-printers.

Its beautiful glowing effects makes this material perfectly suitable to 3D-print a high variety of creations that deserve to be seen when darkness strikes.



Key Benefits

- Up to 4 hours glow effect
- Rechargeable in sun or artificial light
- Ideal for dark environments
- Smooth surface finish

POLYMER PROPERTIES HAZARD GLOW

Liqcreate Hazard Glow is a glow-in-the-dark polymer, ideal for creative applications. The following table contains information about the properties of this specific resin.

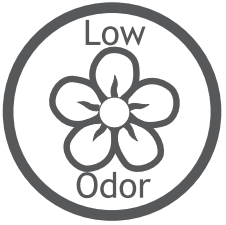
Description	ASTM Method	Metric[1]	Imperial[1]
Tensile Strength	D638M	49 MPa	7.1 ksi
Tensile Modulus	D638M	1.6 GPa	232 ksi
Elongation at break	D638M	5%	5%
Flexural Strength	D790M	48 MPa	7.0 ksi
Flexural modulus	D790M	1.4 GPa	203 ksi
IZOD Impact (notched)	D256A	10 J/m	0.19 ft-lb/in
Shore D Hardness	D2240	77	77
Water sorption	D570-98	0.3%	0.3%
Tg	D7028	51°C	124°F

[1]Material properties can vary with part geometry, print orientation, print settings and postcuring settings.

RESIN CLEANER

Liqcreate Resin Cleaner is a non-toxic cleaning solution for 3D printing. It is a safe, highly effective solultion that cleans faster than other cleaner liquids based on IPA, bio-ethanol and other chemicals. Liqcreate Resin Cleaner is not a dangerous good, non-flammable and has a low odor compared to IPA.

The cleaning liquid can clean SLA, DLP and LCD printed objects, platforms, instruments and surfaces*. It can be used with ultrasonic cleaners and the liquid can be used several times without refilling or filtering the Liqcreate Resin Cleaner.



Key Benefits

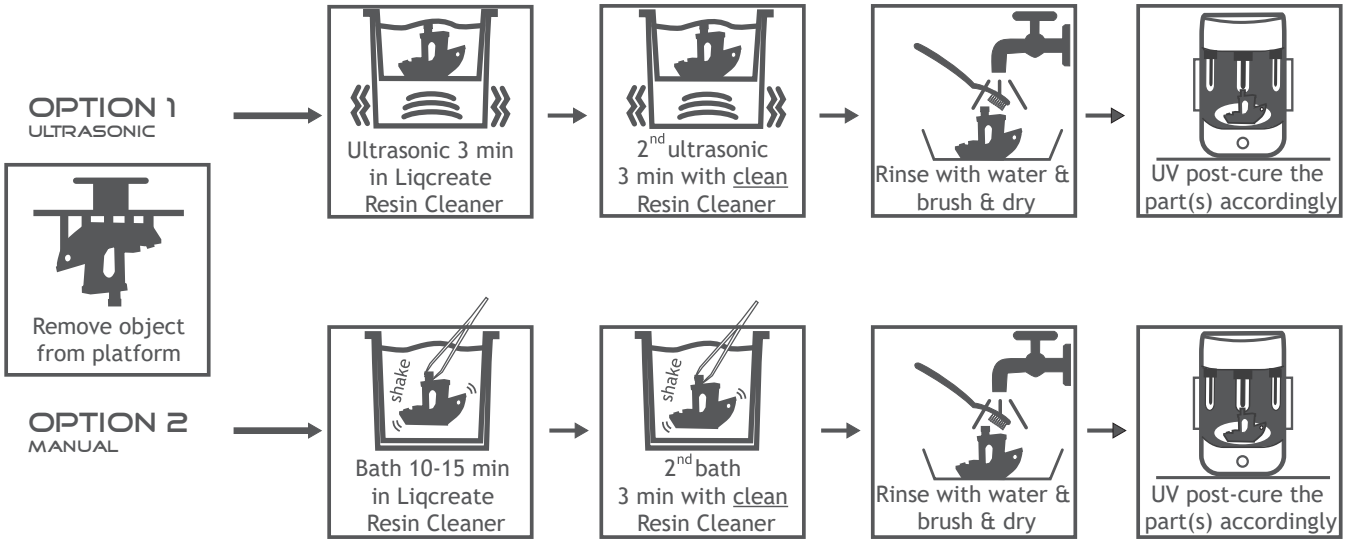
- Excellent and effective cleaning
- Biodegradable
- Non-flammable
- Non-toxic & non-hazardous

* Liqcreate Resin Cleaner is not compatible with ABS polystyrene tool/surfaces.

RESIN CLEANER USAGE

Liqcreate Resin Cleaner* can be used by following the steps. Please view the two process options below:

STEPS:

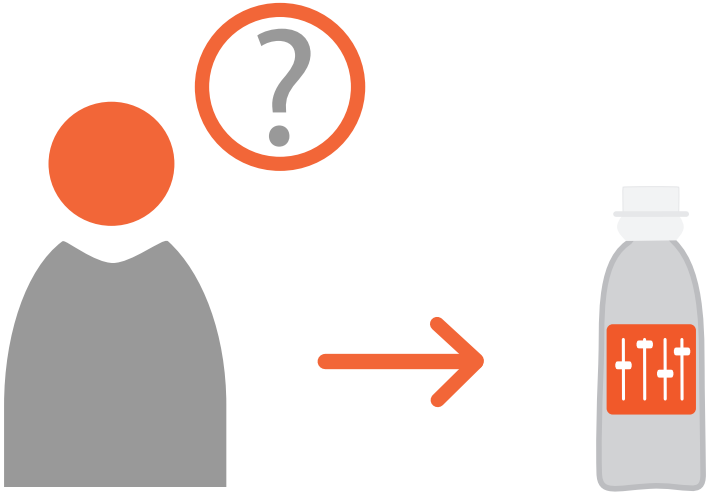


* Liqcreate Resin Cleaner is not compatible with ABS polystyrene tool/surfaces.

CUSTOM RESIN DEVELOPMENT

Is your company looking for a resin with specific mechanical properties, printing speed, color or other features? We offer the possibility to develop a custom made resin according to your requirements[5].

How does it work?
One of our business developers will get in touch with you to discuss your application and requirements. The engineers at Liqcreate will evaluate the feasibility and present a project plan. After you accept the project plan, we will start to develop the resin. During the development phase we will present updates in the form of samples, printed parts and test specifications, to ensure the final product is according to your needs[6]. For more information please contact us: info@liqcreate.com



Key Benefits

- Specific properties
- 100% aligned on 3D-printer
- Color of choice
- Unique resin

[5] In order to create a custom made resin MOQ are required
[6] Depending on the resin and agreements

OPTIMIZATION 3D-PRINTER WITH RESIN

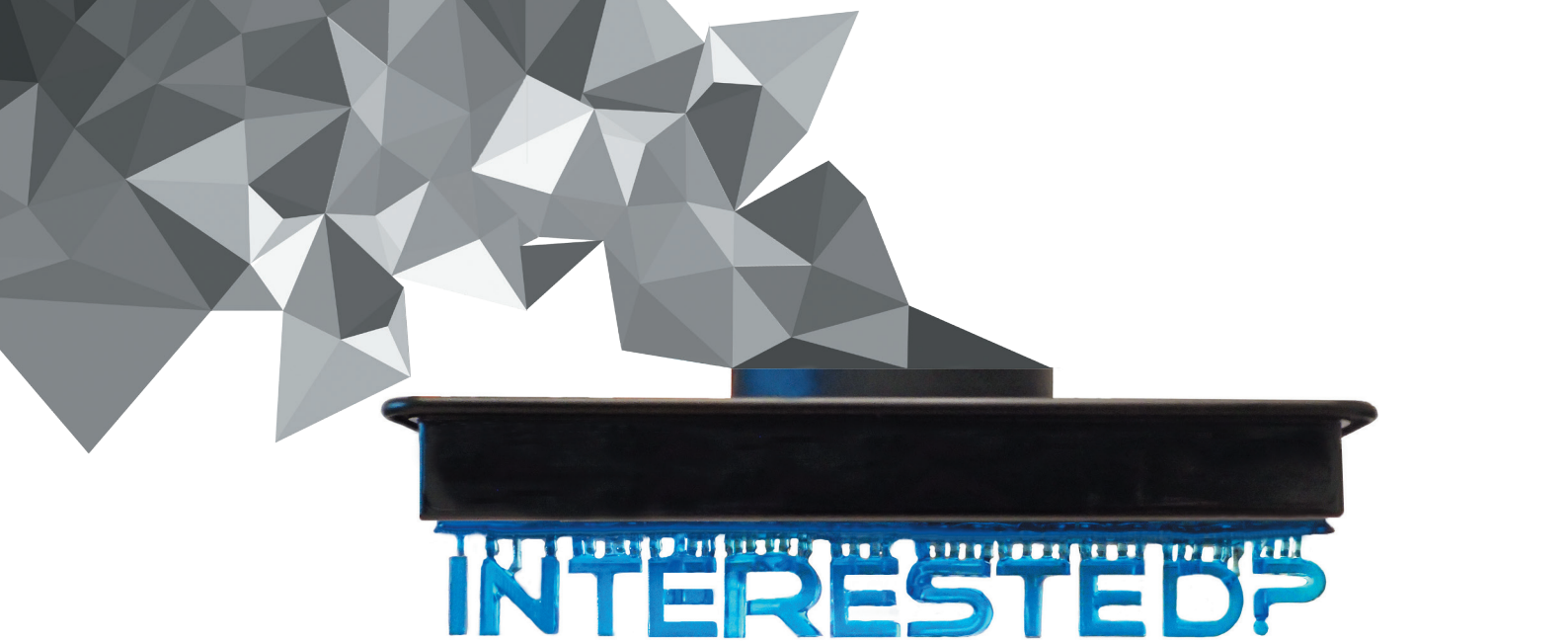
Are you a 3D-printer manufacturer or print center and searching for a resin that works well on your 3D-printer? Our experienced engineers can create printing parameters on any 3D-printer to ensure compatibility with our resins.

How does it work?

1. Select the desired Liqcreate resin(s) and send us an email: info@liqcreate.com.
2. One of our engineers will get in touch with you to verify the compatibility with your 3D-printer and application.
3. Our engineers will align the 3D-printer with the chosen resin(s). This can be established on-site or at our facility.
4. After the alignment we will save the parameters and you can start printing with the desired resin(s).

Liqcreate resins work on multiple 3D-printers and we increase the number of compatible 3D-printers on a frequent basis. Please consult our website for the most recent parameters.

LIQCREATE



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Questions?
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