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3D Printing

Materials List and Spec Sheets

*Note: Material performance may vary depending on application, processing conditions and end-use environment. The information in this sheet is provided as typical values only and is not guaranteed.

SLA Materials – Generic Resin

C-UV 9400

Product Description

C-UV 9400 is an ABS-like Stereolithography (SLA) resin which has accurate and durable features. It is designed for solid state SLA platforms. C-UV 9400 can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries.

Typical Features

- Good accuracy and dimensional stability.
- Suitable for a wide range of applications, including vacuum casting masters.
- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.

Physical Properties (Liquid)

Appearance	White
Density	~1.13 g/cm³@25 °C
Viscosity	355 cps@25 °C

Optical Properties

Critical Exposure (Ec)	9.3 mJ/cm²
Penetration Depth (Dp)	0.145 mm
Recommended Layer Thickness of Construction	0.1 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	52 °C
Glass Transition (Tg)	DMA, E'' peak	62
Coefficient of Thermal Expansion	TMA (T<Tg)	97×10^{-6} /°C
Tensile Modulus	ASTM D638	2189 - 2395 MPa
Flexural Modulus	ASTM D790	2692 - 2775 MPa
Tensile Strength	ASTM D638	27 - 31 MPa
Flexural Strength	ASTM D790	69 - 74 MPa
Izod Impact (Notched)	ASTM D256	58 - 70 J/m
Elongation at Break	ASTM D638	12 - 20%
Hardness (Shore D)	ASTM D2240	83
Density		1.16 g/cm³

SLA Materials – Transparent Resin

Crysta-8QEF1

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Product Description

Crysta-8QEF1 is a clear Stereolithography (SLA) resin which has accurate and durable features. It is designed for solid state SLA platforms. Crysta-8QEF1 can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries.

Typical Features

- Superior clarity and builds parts with good dimensional stability and excellent accuracy.
- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.
- Ideal for vacuum casting master patterns.
- Mid-range strength and toughness.
- Easy to burn completely.

Physical Properties (Liquid)

Appearance	Clear, transparent
Density	~1.12 g/cm³@25 °C
Viscosity	312 - 420 cps@28 °C

Optical Properties

Critical Exposure (Ec)	9.8 - 12 mJ/cm²
Penetration Depth (Dp)	0.18 mm
Recommended Layer Thickness of Construction	0.1 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	40 - 51 °C
Glass Transition (Tg)	DMA, E'' peak	42 - 58 °C
Tensile Modulus	ASTM D638	2490 - 2660 MPa
Flexural Modulus	ASTM D790	2570 - 2860 MPa
Tensile Strength	ASTM D638	48 MPa
Flexural Strength	ASTM D790	75 - 81 MPa
Izod Impact (Notched)	ASTM D256	27 - 35 J/m
Elongation at Break	ASTM D638	7 - 11%
Hardness (Shore D)	ASTM D2240	76 - 82

Godart®8001

Product Description

Godart®8001 is a clear Stereolithography (SLA) resin which has good dimensional stability. It is used in the manufacturing of mother models, conceptual models, general components and functional components that require high transparency in automotive, medical, consumer electronics and other industrial fields.

Typical Features

- SLA photosensitive resin with high transparency and low viscosity.
- Mid-range strength and toughness.
- High accuracy and good dimensional stability.

Physical Properties (Liquid)

Appearance	An almost colorless, transparent, viscous liquid
Density	~1.12 g/cm³@25 °C
Viscosity	200mPa·s@25 °C

Optical Properties

Critical Exposure (Ec)	7.9 mJ/cm²
Penetration Depth (Dp)	0.08 mm
Recommended Layer Thickness of Construction	0.1 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Flexural Modulus	ASTM D790	2100 MPa
Tensile Strength	ASTM D638	48 MPa
Flexural Strength	ASTM D790	86 MPa
Izod Impact (Notched)	ASTM D256	28 J/m
Elongation at Break	ASTM D638	12%
Hardness (Shore D)	ASTM D2240	86
Water Absorption	ASTM D570-98	0.48%

* The service temperature and storage temperature of Godart 8001 should not be too high. The service temperature range is 26±2°C, and the storage temperature is 25±5 °C.

SLA Materials – High Toughness Resin

Godart®8228

Product Description

Godart®8228 is a ABS-like Stereolithography (SLA) material which has super toughness, high hardness and high strength. It can produce thin-walled parts with a thickness of 2.5mm and is resistant to temperature 70°C. It has excellent detail, small molding shrinkage, good dimensional stability, and is suitable for parts with high impact and shock absorption.

Typical Features

- Superior clarity and builds parts with good dimensional stability and excellent accuracy.
- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.
- Ideal for vacuum casting master patterns.
- Mid-range strength and toughness.
- Easy to burn completely.

Physical Properties (Liquid)

Appearance	Yellow

Mechanical Properties

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT) (0.46 MPA)	ASTM D648 @ 66 psi	56 °C
Tensile Modulus	ASTM D638	2136 MPa
Flexural Modulus	ASTM D790	2155 MPa
Tensile Strength	ASTM D638	51.21 MPa
Flexural Strength	ASTM D790	93.5 MPa
Izod Impact (Notched)	ASTM D256	27 J/m
Hardness (Shore D)	ASTM D2240	86

Lasty-R

Product Description

Lasty-R is an ABS-like Stereolithography (SLA) resin which has accurate and durable features. It has high toughness and is applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries.

Typical Features

- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.
- Good accuracy and dimensional stability.
- Suitable for a wide range of applications, including vacuum casting masters.

Physical Properties (Liquid)

Appearance	Light green, yellow
Density	1.11 - 1.15 g/cm³@25 °C
Viscosity	450 - 530 cps@27 °C

Optical Properties

Critical Exposure (Ec)	7.1 - 8.1 mJ/cm²
Penetration Depth (Dp)	0.14 - 0.16 mm
Recommended Layer Thickness of Construction	0.05 - 0.12 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	55 - 69 °C
Glass Transition (Tg)	DMA, E'' peak	60 - 79 °C
Coefficient of Thermal Expansion	TMA (T<Tg)	85 - 99 × 10^{-6} /°C
Tensile Modulus	ASTM D638	2611 - 2765 MPa
Flexural Modulus	ASTM D790	2685 - 2775 MPa
Tensile Strength	ASTM D638	45 - 58 MPa
Flexural Strength	ASTM D790	71 - 78 MPa
Poisson's Ratio	ASTM D638	0.40 - 0.45
Izod Impact (Notched)	ASTM D256	25 - 40 J/m
Elongation at Break	ASTM D638	13 - 22%
Hardness (Shore D)	ASTM D2240	78 - 90

Density	ASTM D150-98	1.12 - 1.18 g/cm³
Dielectric Constant 60 Hz	ASTM D150-98	4.1 - 5.1
Dielectric Constant 1 kHz	ASTM D150-98	3.4 - 4.2
Dielectric Constant 1 MHz	ASTM D150-98	3.1 - 4.1
Dielectric Strength kV/mm	ASTM D149-97a	12.7 - 16.9

* Lasty-R should not be used or stored at excessively high temperatures; please use it below 25°C. The relative humidity during use and storage must be kept below 38% RH.

Somos® Taurus™

Product Description

DSM Somos® Taurus™ is a nylon-like Stereolithography (SLA) resin material that combines heat resistance and toughness, with a heat resistance of up to 90°C and a notched impact strength of 47.5 J/m. It has a smooth surface finish and is suitable for outdoor parts, gears and housings.

Typical Features

- High heat resistance (up to 90°C).
- High toughness and impact resistance.
- Good dimensional stability, suitable for functional prototypes and engineering parts.

Physical Properties (Liquid)

Appearance	Charcoal, blue-grey

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	90 °C
Tensile Modulus	ASTM D638	2310 MPa
Flexural Modulus	ASTM D790	2054 MPa
Tensile Strength	ASTM D638	46.9 MPa
Izod Impact (Notched)	ASTM D256	47.5 J/m
Elongation at Break	ASTM D638	24%
Hardness (Shore D)	ASTM D2240	83
Water Absorption	ASTM D570-98	0.75%

Somos®Imagine 8000

Product Description

DSM Somos 8000 is an ABS-like Stereolithography (SLA) resin with low viscosity. It is durable, translucent and waterproof. It can be made firm and hard and is ideal for many applications in the automotive, medical, consumer product, water flower system and RTV model sectors.

Typical Features

- Waterproof resin.
- SLA photosensitive resin with low viscosity.
- Rigid and durable, ideal for enclosures and housings.
- Suitable for vacuum casting mast models.

Physical Properties (Liquid)

Appearance	White (opaque, translucent)
Density	~1.3 g/cm3@25 °C
Viscosity	~260cps@30 °C

Optical Properties

Critical Exposure (Ec)	~11 mJ/cm²
Penetration Depth (Dp)	0.1 mm
Exposure for 0.010-inch thickness (E10)	~54 mJ/cm²

Mechanical Properties

Property Description	Somos®8000	ABS (in-comparison)
Heat Deflection Temperature (0.46MPa)	46 - 60 °C	94 - 207 °C
Heat Deflection Temperature (1.81MPa)	49 - 55 °C	86.4 - 194 °C
Glass Transition (Tg)	39 - 50 °C	N/A
Tensile Modulus	2500 - 3000 MPa	2000 MPa
Flexural Modulus	1900 - 2500 MPa	2300 MPa
Tensile Strength	45 - 54 MPa	45.7 MPa
Flexural Strength	60 - 75 MPa	73.5 MPa
Izod Impact (Notched)	0.2 - 0.3 J/cm	1.6 J/cm
Elongation at Break	11 - 20%	41.6%
Yield Elongation	3 - 5%	N/A
Water Absorption	0.35%	0.20 - 0.45%

TOP31B

Product Description

TOP31B is an ABS-like Stereolithography (SLA) resin which has accurate and durable features. It is designed for solid state SLA platforms, and can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries.

Typical Features

- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.
- Good dimensional stability and lower shrinkage rate.
- Better resistance to yellowing compared to other SLA materials.
- Ideal for vacuum casting masters.

Physical Properties (Liquid)

Appearance	Grey
Density	1.11 ~ 1.15 g/cm³@25 °C
Viscosity	510 ~ 590 cps@25 °C

Optical Properties

Critical Exposure (Ec)	8.3 - 9.2 mJ/cm²
Penetration Depth (Dp)	0.135 - 0.158 mm
Recommended Layer Thickness of Construction	0.05 - 0.11 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	58 - 69 °C
Glass Transition (Tg)	DMA, E'' peak	62 - 75 °C
Coefficient of Thermal Expansion	TMA (T<Tg)	90 - 103 × 10^{-6} /°C
Tensile Modulus	ASTM D638	2649 - 2731 MPa
Flexural Modulus	ASTM D790	2722 - 2792 MPa
Tensile Strength	ASTM D638	41 - 58 MPa
Flexural Strength	ASTM D790	69 - 76 MPa
Poisson's Ratio	ASTM D638	0.4 - 0.44
Izod Impact (Notched)	ASTM D256	29 - 34 J/m
Elongation at Break	ASTM D638	7 - 11 %

Hardness (Shore D)	ASTM D2240	78 - 88
Density		1.12 - 1.18 g/cm³
Dielectric Constant 60 Hz	ASTM D150-98	4.2 - 5.0
Dielectric Constant 1 kHz	ASTM D150-98	3.3 - 4.2
Dielectric Constant 1 MHz	ASTM D150-98	3.2 - 4.0
Dielectric Strength kV/mm	ASTM D149-97a	12.8 - 16.1

* TOP31B should not be used or stored at high temperatures. Please use it below 25°C. The relative humidity during use and storage must be kept below 38% RH.

Lasty-702

Product Description

Lasty-702 is a generic Stereolithography (SLA) resin which has accurate features and durability. It can be applied in, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries.

Typical Features

- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.
- Good accuracy and dimensional stability.
- Suitable for a wide range of applications, including vacuum casting masters.

Physical Properties (Liquid)

Appearance	Light green, yellow
Density	1.11 - 1.15 g/cm³@25 °C
Viscosity	510 - 590 cps@28 °C

Optical Properties

Critical Exposure (Ec)	8.1 - 8.9 mJ/cm²
Penetration Depth (Dp)	0.135 - 0.158 mm
Recommended Layer Thickness of Construction	0.05 - 0.12 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	58 - 69 °C
Glass Transition (Tg)	DMA, E'' peak	62 - 75 °C
Coefficient of Thermal Expansion	TMA (T<Tg)	90 - 103 × 10^{-6} /°C
Tensile Modulus	ASTM D638	2649 - 2731 MPa
Flexural Modulus	ASTM D790	2722 - 2792 MPa
Tensile Strength	ASTM D638	41 - 58 MPa
Flexural Strength	ASTM D790	69 - 76 MPa
Poisson's Ratio	ASTM D638	0.40 - 0.44
Izod Impact (Notched)	ASTM D256	29 - 34 J/m
Elongation at Break	ASTM D638	7 - 11%
Hardness (Shore D)	ASTM D2240	78 - 88
Water Absorption	ASTM D570-98	

Density		1.12 - 1.18 g/cm³
Dielectric Constant 60 Hz	ASTM D150-98	4.2 - 5.0
Dielectric Constant 1 kHz	ASTM D150-98	3.3 - 4.2
Dielectric Constant 1 MHz	ASTM D150-98	3.2 - 4.0
Dielectric Strength kV/mm	ASTM D149-97a	12.8 - 16.1

* The use and storage temperature of Lasty-702 should not be too high; please use it below 25°C. The relative humidity during use and storage must be kept within the required range (sentence incomplete in original).

Lasty-709

Product Description

Lasty-709 is an ABS-like Stereolithography (SLA) resin which has accurate and durable features. It is designed for solid state SLA platforms. Lasty-709 can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries.

Typical Features

- Resin's medium viscosity supports facilitates easier post-curing and less part finishing time.
- Good accuracy and dimensional stability.
- Need minimal part finishing.

Physical Properties (Liquid)

Appearance	Light green, yellow
Density	1.11 - 1.15 g/cm³@25 °C
Viscosity	445 - 518cps @ 26 °C

Optical Properties

Critical Exposure (Ec)	8.3 - 9.1 mJ/ cm²
Penetration Depth (Dp)	0.135 - 0.158 mm
Recommended Building Layer Thickness	0.05 - 0.12 mm

Mechanical Properties

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	58 - 66 °C
Glass Transition (Tg)	DMA, E'' peak	62 - 71 °C
Coefficient of Thermal Expansion	TMA (T<Tg)	90 - 103 x 10^{-6} /°C
Tensile Modulus	ASTM D638	2649 - 2730 MPa
Flexural Modulus	ASTM D790	2712 - 2891 MPa
Tensile Strength	ASTM D638	41 - 60 MPa
Flexural Strength	ASTM D790	69 - 79 MPa
Poisson's Ratio	ASTM D638	0.4 - 0.44
Izod Impact (Notched)	ASTM D256	28 - 33 J/m
Elongation at Break	ASTM D638	7 - 11%
Hardness (Shore D)	ASTM D2240	78 - 88

Density		1.12 - 1.18 g/cm³
Dielectric Constant 60 Hz	ASTM D150-98	4.2 - 5.0
Dielectric Constant 1 kHz	ASTM D150-98	3.3 - 4.2
Dielectric Constant 1 MHz	ASTM D150-98	3.2 - 4.0
Dielectric Strength kV/mm	ASTM D149-97a	12.8 - 16.1

* The usage and storage temperature of Lasty-709 should not be too high. Please use it below 25 degrees Celsius; The relative humidity for use and storage must be below 38RH%.

GH100

Product Description

GH100 is a red, semi-transparent high-temperature resistant Stereolithography (SLA) resin with a service temperature of up to 150°C. It offers good dimensional stability and rigidity, and is suitable for rapid tooling and products requiring heat resistance.

Typical Features

- High heat resistance (up to 150°C).
- Stable dimensions and good rigidity.
- Suitable for functional prototypes and engineering parts.

Physical Properties (Liquid)

Appearance	Red, semi-transparent

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	150°C
Tensile Modulus	ASTM D638	3235 MPa
Flexural Modulus	ASTM D790	3165 MPa
Tensile Strength	ASTM D638	42.7 MPa
Flexural Strength	ASTM D790	96.6 MPa
Elongation at Break	ASTM D638	1.5%
Hardness (Shore D)	ASTM D2240	83

YG H-3001

Product Description

YG H-3001 is an Stereolithography (SLA) resin with high temperature resistance and high precision. It can be widely used in the production of parts for industrial applications, automobiles, medical prototypes, shoe molds, household appliances, mobile phones, home automation, building materials and consumer electronics..

Typical Features

- Designed for high-temperature SLA engineering prototypes.
- Rigid and dimensionally stable.
- Ideal for functional prototypes.

Physical Properties (Liquid)

Appearance	White
Density	1.1 g/cm³@25 °C
Viscosity	580 cps@28 °C

Optical Properties

Critical Exposure (Ec)	15.0 mJ/ cm²
Penetration Depth (Dp)	0.10 mm
Recommended Building Layer Thickness	0.1 mm

Mechanical Properties (90-minute UV post-cure)

Property Description	Test Method	Metric
Heat Deflection Temperature (HDT)	ASTM D648 @ 66 psi	99.6 °C
Tensile Modulus	ASTM D638	1900 - 2090 MPa
Flexural Modulus	ASTM D790	2900 - 3220 MPa
Tensile Strength	ASTM D638	40 - 44 MPa
Flexural Strength	ASTM D790	64 - 69 MPa
Izod Impact (Notched)	ASTM D256	34.4 J/m
Elongation at Break	ASTM D638	13 - 20%
Hardness (Shore D)	ASTM D2240	85

SLS Materials

Nylon PA12 FS3300PA

Product Description

White PA12 Nylon is the industry standard for SLS. It features excellent mechanical properties, bio-compatibility, balanced performance, and is ideal for rapid prototyping to functional parts production.

Key Features

- Excellent mechanical properties
- High toughness, cost-effective
- High oxidation resistance & low water absorption

Physical Properties

Appearance	White
Bulk Density	0.48 g/cm³
Part Density	0.95 g/cm³

Thermal Properties

Melting Point	183 °C
Heat Deflection Temp (HDT), 1.8 MPa GB/T 1040.2-2006	83.5 °C
Heat Deflection Temp (HDT), 0.45 MPa GB/T 1040.2-2006	146.2 °C

Mechanical Properties

Property Description	**Metric**
Tensile Strength GB/T 1040.2-2006	46 MPa
Tensile Modulus GB/T 1040.2-2006	1602 MPa
Elongation at Break GB/T 1040.2-2006	36%
Flexural Strength GB/T 1040.2-2006	46.3 MPa
Flexural Modulus GB/T 1040.2-2006	1300 MPa
Impact Strength (notched Izod) GB/T 1843-2008	4.9 KJ/m²
Impact Strength (unnotched Izod) GB/T 1843-2008	13.2 KJ/m²

SLS Materials

Nylon PA12 FS3201PA-F

Product Description

Black PA12 Nylon is a high-performance, easy-to-process material. It's cost efficient and ideal for medical orthopedics, automotive interior, and functional parts and end-use parts.

Key Features

- Excellent impact resistance
- High toughness, cost-effective
- Low water absorption, high temperature resistance

Physical Properties

Appearance	Black / Dark Grey
Bulk Density	0.52 g/cm³
Part Density	1.01 g/cm³

Thermal Properties

Melting Point (10°C/min) ISO 11357-1:2020	185.5 °C
Heat Deflection Temp (HDT), 1.8 MPa ISO 78-1:2020	52 °C
Heat Deflection Temp (HDT), 0.45 MPa ISO 78-1:2020	145 °C

Mechanical Properties

Property Description	Metric
Tensile Strength ISO 527-1:2019	42 MPa
Tensile Modulus ISO 527-1:2019	1450 MPa
Elongation at Break ISO 527-1:2018	40%
Flexural Strength ISO 178:2019	45 MPa
Flexural Modulus ISO 178:2019	1350 MPa
Impact Strength (notched Izod) ISO 180:2019	10 KJ/m²
Impact Strength (unnotched Izod) ISO 180:2019	32 KJ/m²

SLS Materials

PA12 GF FS3400GF

Product Description

PA12 GF (Glass bead-filled polyamide 12 powder) is a high-performance material that blends excellent rigidity and good elongation at break. Ideal for electronic enclosures, functional prototypes and end-use parts.

Key Features

- High stiffness, good toughness, high mechanical strength
- High temperature resistance, good insulation
- Good corrosion resistance

Physical Properties

Appearance	Grey, Beige
Bulk Density	0.67 g/cm³
Part Density	1.26 g/cm³

Thermal Properties

Melting Point GB/T 1634.2-2004	184 °C
Heat Deflection Temp (HDT), 1.8 MPa GB/T 1634.2-2004	88 °C
Heat Deflection Temp (HDT), 0.45 MPa GB/T 1634.2-2004	162 °C

Mechanical Properties

Property Description	Metric
Tensile Strength GB/T 1040.2-2006	44 MPa
Tensile Modulus GB/T 1040.2-2006	3500 - 7800 MPa
Elongation at Break GB/T 1040.2-2006	5%
Flexural Strength GB/T 9341-2008	68 MPa
Flexural Modulus GB/T 9341-2008	2415 MPa
Impact Strength (notched Izod) GB/T 1843-2008	4.13 KJ/m²
Impact Strength (unnotched Izod) GB/T 1843-2008	19.28 KJ/m²

SLS Materials

PP GF 3200P

Product Description

PP GF (Glass bead-filled polypropylene powder) is a high-performance engineering composite that blends rigidity, heat resistance, and dimensional stability while remaining lightweight. Ideal for functional prototypes.

Key Features

- Excellent toughness, high strength
- Non-absorbent
- Good corrosion resistance

Physical Properties

Appearance	Off-white
Bulk Density	0.58 g/cm³
Part Density	1.17 g/cm³

Thermal Properties

Melting Point GB/T 1634.2-2004	145 °C
Heat Deflection Temp (HDT), 1.8 MPa GB/T 1634.2-2004	60 °C
Heat Deflection Temp (HDT), 0.45 MPa GB/T 1634.2-2004	100 °C

Mechanical Properties

Property Description	Metric
Tensile Strength GB/T 1040.2-2006	32 MPa
Tensile Modulus GB/T 1040.2-2006	2000 MPa
Elongation at Break GB/T 1040.2-2006	30%
Flexural Strength GB/T 9341-2008	28.7 MPa
Flexural Modulus GB/T 9341-2008	2100 MPa
Impact Strength (notched Izod) GB/T 1843-2008	2.3 KJ/m²
Impact Strength (unnotched Izod) GB/T 1843-2008	11 KJ/m²

TPU LUVOSINT X92A-2

Physical Properties *Ester based thermoplastic polyurethane TPU Powder, white color

	Test Method	Specimen	Unit	Typical Value
Specific Gravity	ISO 1183	Sintered part	g/cm³	1.2
Water Absorption 23 °C, 24 h			%	< 0.5
Melt Volume Rate MVR190°C/2.16 kg	ISO 1133	Powder	cm³/10 min	18.0
Glass Transition Temp	ISO 6721-1	Sintered part	°C	-13.6
Shrinkage	Measured on test prints		%	3.0

Mechanical Properties @ 23 °C / 50 % rh (according to build orientation)

Hardness (Shore A)	ISO 868	Sintered part	-	88
Flexural Modulus 20 °C 1 Hz, 2 °C/min	ISO 6721-1	Sintered part	MPa	27
Flexural Modulus 60 °C 1 Hz, 2 °C/min	ISO 6721-1	Sintered part	MPa	72
Tensile Strength (x-direction)	ISO 53504	Sintered S1-bar	MPa	20
Tensile Strength (z-direction)	ISO 53504	Sintered S1-bar	MPa	15
Elongation (x-direction)	ISO 53504	Sintered S1-bar	%	520
Elongation (z-direction)	ISO 53504	Sintered S1-bar	%	500
Abrasion Resistance (x-direction)	ISO 4649	Sintered part	m³	31
Abrasion Resistance (z-direction)	ISO 4649	Sintered part	m³	28
Compression Strength (x-direction)	ISO 604	Type A	MPa	33
Compression Strength (z-direction)	ISO 604	Type A	MPa	40
Compression Modulus (x-direction)	ISO 604	Type B	MPa	15
Compression Modulus (z-direction)	ISO 604	Type B	MPa	20
Poisson ratio (Hencky) 0.2 mm/s				0.45

Thermal Properties

Vicat-softening Temperature VST A	ISO 306	MPTS ISO 3167 A	°C	90
Melting Temperature	ISO 11357		°C	160

Powder Properties

x10	Laser diff.		µm	20
x50	Laser diff.		µm	50
x90	Laser diff.		µm	105
Bulk Density			g/cm³	0.457
Part Bed Powder Density			g/cm³	0.600

HP 3D High Reusability PA 12

Product Description

HP MJF PA12 (Nylon 12) is a robust, versatile thermoplastic engineered for HP's Multi Jet Fusion 3D printing technology. It delivers an excellent balance of strength, chemical resistance, and fine detail. It can also withstand drastic temperature drops, making it the industry standard for functional prottoypes and end-use production.

Typical Features

- Quality prints at low cost per part
- Produces strong, functional, detailed, complex parts
- Provides excellent balance between performance and reusability

General Properties

Measurement	Test Method	Value
Powder Melting Point (DSC)	ASTM D3418	186°C/367°F
Particle Size	ASTM D3451	58 µm
Bulk Density of Powder	ASTM D1895	0.48 g/cm³ (0.017 lb/in³)
Part Density	ASTM D792	1.3 g/cm³ (0.047 lb/in³)

Mechanical Properties

Property Description	Test Method	Value
Tensile Strength, Maximum Load 17, XY	ASTM D638	30 MPa/4350 psi
Tensile Strength, Maximum Load 11, Z	ASTM D638	30 MPa/4350 psi
Tensile Modulus, 7 XY	ASTM D638	2800 MPa/406 ksi
Tensile Modulus, 7 Z	ASTM D638	2900 MPa/421 ksi
Izod Impact (Notched) (3.2mm, 23°C), XYZ	ASTM D256	2.7 KJ/m²
Elongation at Break, 7 XY	ASTM D638	6.5%
Elongation at Break, 7 Z	ASTM D638	6.5%

Thermal Properties

Heat Deflection Temp (HDT), ASTM D648 (@ 0.45 MPa, 66 psi), Z	173°C/344°F A
Heat Deflection Temp (HDT), ASTM D648 (@ 1.82 MPa, 264 psi), Z	121°C/250°F

Aluminium FS AlSi10Mg

Product Description

AlSi10Mg is an aluminium alloy powder designed for metal additive manufacturing using Laser Powder Bed Fusion (LPBF). Combining low weight with excellent mechanical properties, it is well suited for aerospace and automotive applications, including both prototyping and end-use components.

Key Features

- High strength-to-weight ratio
- Good thermal conductivity and corrosion resistance
- Ideal for complex geometries

General Properties

Appearance	Matte silver-gray metallic
Particle Size	15 - 53µm
Form	Spherical
Liquidity	150 S
Apparent Density	1.45 g/cm³

Mechanical Properties

Property Description	**Metric**
Density	≥ 95%
Tensile Strength	≥ 330 MPa
Yield Strength	≥ 245 MPa

Stainless Steel FS 316L

Product Description

FS SS316L is an stainless steel alloy powder designed for metal additive manufacturing using Laser Powder Bed Fusion (LPBF). It has excellent corrosion resistance, high strength, good thermal properties and ideal for a range of prototyping and end-use applications.

Key Features

- Excellent resistance to corrosion and rust
- Good mechanical properties
- Good thermal properties

General Properties

Appearance	Matte metallic, silver-grey
Particle Size	15 - 53µm
Form	Spherical
Liquidity	40 S
Apparent Density	3.9 g/cm³

Mechanical Properties

Property Description	**Metric**
Density	≥ 99%
Tensile Strength	≥ 560 MPa
Yield Strength	≥ 480 MPa

Stainless Steel FS 17-4 PH

Product Description

Metal 3D Printed 17-4 PH Stainless Steel is a high-performance material with excellent tensile strength and moderate corrosion resistance.

Key Features

- Excellent resistance to corrosion and rust
- Good mechanical properties
- Good thermal properties

General Properties

Appearance	Matte metallic, silver-grey
Particle Size	15 - 53µm
Form	Spherical
Apparent Density	≥7.70 g/cm³

Mechanical Properties (Heat Treated)

Property Description	**Metric**
Density	≥ 12%
Tensile Strength	≥ 1200 MPa
Yield Strength	≥ 1130 MPa

Titanium FS Ti6Al4V

Product Description

FS Ti6Al4V is a Titanium alloy powder designed for metal additive manufacturing using Laser Powder Bed Fusion (LPBF). It offers excellent corrosion resistance and is used to create complex, lightweight, and high-strength one-off and low volume production.

Key Features

- Excellent strength-to-weight ratio
- Excellent resistance to corrosion
- High strength and good thermal resistance

General Properties

Appearance	Matte, dull grey metallic
Particle Size	15 - 53µm
Form	Spherical
Liquidity	45 S
Apparent Density	2.5 g/cm³

Mechanical Properties

Property Description	**Metric**
Density	≥ 99%
Tensile Strength	≥ 600 MPa
Yield Strength	≥ 540 MPa

ABS-FR0 Filament

Physical Properties

	Test Method	Test Condition	Unit	Typical Value
Density	ASTM D1505	23°C	g/cm³	1.18
Melt Flow Rate	ASTM D1238	220°C/10kg	g/10 min	21

Mechanical Properties

Tensile Strength	ASTM D638	50mm/min	MPa	35
Elongation at Break	ASTM D638	50mm/min	%	10
Flexural Strength	ASTM D790	5mm/min	MPa	65
Flexural Modulus	ASTM D790	5mm/min	MPa	2280
Notched Izod Impact Strength	ASTM D256	23°C	J/m	220
Hardness	ASTM D2240	15s	Shore D	87

Thermal Properties

Melting Temperature	DSC	10°C/min	°C	/
Printing Temperature	/	/	°C	202-260
Viscat Softening Temperature	ASTM D1525	50°C/h, 10N	°C	101

Flame Retardant Properties

Flame retardation 3.2 mm	UL 94	/	Level	V0
Flame retardation 1.6 mm	UL 94	/	Level	V0

ASA Filament

Test Environment	Temperature 23 ± 2°C, Humidity 50 ± 5%
Pre-Test Conditioning Method	Dry state

Mechanical Properties

	Test Method	Unit	Value
Tensile Strength	GB/T1040-2006	MPa	39.6
Elongation at Break	GB/T1040-2006	%	24
Flexural Strength	GB/T9341-2008	MPa	64.9
Flexural Modulus	GB/T9341-2008	MPa	1942.1
Notched Izod Impact Strength	GB/T18964.1-2008	KJ/m²	10.9
Unnotched Izod Impact Strength	GB/T18964.1-2008	KJ/m²	NB
Melt Flow Rate	GB/T3682.2	G/10 min	25-35
Heat Deflection Temperature	GB/T1634-2004	°C	91.2
Density	GB/T1033.1-2008	kg/m³	1.067