

HLH

3D Printing Material Specification Sheets

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CV-UV 9400

PRODUCT DESCRIPTION 产品介绍

C-UV 9400 is an ABS like SL 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. The parts durability building with C-UV9400 is over 6.5 months.

C-UV 9400 是一种具备精确和耐久特性的类 **ABS** 的立体光造型树脂。它被用于固态激光的光固化成型法。**C-UV9400** 可应用于汽车、医疗、消费电子等工业领域的母模,概念模型,一般部件,功能性部件的制作。用 **C-UV 9400** 树脂制造的部件的耐久性长达 **6.5** 个月以上。

TYPICAL FEATURES 典型特点

- Liquid resin's medium viscosity, so easy recoating, easy clean parts and machines** (中等粘度的液态树脂, 确保其更容易涂层以及清洗部件和机器)
- Improved strength retained, improved dimensions retention of parts in humid condition** (在潮湿环境中具有更好的强度及尺寸保持特性)
- need minimal part finishing** (只需要极小的部件修饰)
- Long shelf life in machine** (更长的实际使用期限)

TYPICAL BENEFITS 典型优点

- Need less part finishing time,easier post-curing** (更少的部件完成时间)
- Buliding accurate and high tough parts with an improved dimensional stability** (能够建造精确和高韧性的部件并提高了部件的尺寸稳定性)
- High quality controls for vacuum casting parts** (对于真空铸造部件的高质量控制)
- Low shrink and good resistance to yellowing** (低收缩和优异的耐黄变性)
- Magnificent white color** (华丽的白色外观)
- Outstanding machinable SLA material** (卓越的可加工性)

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Physical Properties - Liquid Material 液态材料的物理性能

Appearance 外观	White 白色
Density 密度	1.13g / cm ³ @ 25°C
Viscosity 粘度	355cps @ 28°C
Dp 固化深度	0.145mm
Ec 临界曝光量	9.3mJ/cm ³
Building layer thickness 建造厚度	0.1mm

Mechanical Properties of Post-Cured Material 固化后材料的机械性能

MEASUREMENT 测试项目	TEST METHOD 测试方法	VALUE 数值
		90-minute UV post-cure 90 固化
Hardness 硬度, Shore D	ASTMD 2240	83
Flexural modulus 弯曲模量, Mpa	ASTMD 790	2692-2775
Flexural strength 弯曲强度, Mpa	ASTMD 790	69-74
Tensile modulus 拉伸模量, MPa	ASTMD 638	2189-2395
Tensile strength 拉伸强度, Mpa	ASTMD 638	27-31
Elongation at break 断裂延长率	ASTMD 638	12-20%
Impact strength, notched Izod, J/m 缺口冲击强度	ASTMD 256	58-70
Heat deflection temperature, °C 热变形温度	ASTMD 648@66PSI	52
Glass transition, Tg 玻璃化转变温度, °C	DMA, E"peak	62
Coefficient of thermal expansion, 热膨胀系数, /°C	TMA(T<Tg)	97*E-6
Density 密度, g/cm ³		1.16

注: C-UV9400 使用温度和保存温度不宜过高, 请在 25 摄氏度以下使用; 推荐使用和保存温度为 18-25 摄氏度。

8000

Durable, opaque, white, translucent and waterproof resin

Description

DSM Somos 8000 is a kind of Liquid resin with Low viscosity. It can be made as firm, hard, and waterproof components. The color will be opaque white, similar to engineering plastic.

Application

Somos 8000 resin has the similar properties to traditional engineering plastics such as ABS, PBT...It is ideally for many applications in the automotive, medical, consumer product industries, water flow system and RTV model, Durable conceptual model, Air hose testing and rapid casting models.

Physical Properties	
Appearance	Opaque White
Viscosity	~260cps (30°C)
Density	~1.3g/cm ³ (25°C)

Optical Property (355nm)	
E _c	~11.mJ/cm ²
D _p	0.1mm
E ₁₀	~54mJ/cm ²

Mechanical Properties		
	Somos8000	ABS(Compare)
Tensile Strength	45~54MPa	45.7MPa
Elongation at break	11~20%	41.6%
Yield elongation	3~5%	N/A
Elastic Modulus	2500~3000MPa	2000MPa
Flexural strength	60~75MPa	73.5MPa
Flexural modulus	1900~2500MPa	2300MPa
Impact strength,notched Izod, J/m	0.2~0.3J/cm	1.6J/cm
Water Absorption	0.35%	0.20~0.45%
Glass transition,T _g	39~50°C	N/A
Heat deflection temperature, °C	46~60°C	94~207°C
0.46MPa	49~55°C	86.4~194°C
1.81MPa		

TOP31B

PRODUCT DESCRIPTION 产品介绍

TOP31B is an ABS like SL resin which has accurate and durable features. It is designed for solid state SLA platforms. TOP31B can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries. The parts durability building with TOP31B is over 6.5 months.

TOP31B 是一种具备精确和耐久特性的类 **ABS** 的立体光造型树脂。它被用于固态激光的光固化成型法。**TOP31B** 可应用于汽车，医疗，消费电子等工业领域的母模，概念模型，一般部件，功能性部件的制作。用 **TOP31B** 树脂制造的部件的耐久性长达 **6.5** 个月以上。

TYPICAL FEATURES 典型特点

- Liquid resin's medium viscosity, so easy recoating, easy clean parts and machines** (中等粘度的液态树脂，确保其更容易涂层以及清洗部件和机器)
- Improved strength retained, improved dimensions retention of parts in humid condition** (在潮湿环境中具有更好的强度及尺寸保持特性)
- need minimal part finishing** (只需要极小的部件修饰)
- Long shelf life in machine** (更长的实际使用期限)

TYPICAL BENEFITS 典型优点

- Need less part finishing time, easier post-curing** (更少的部件完成时间)
- Buliding accurate and high tough parts with an improved dimensional stability** (能够建造精确和高韧性的部件并提高了部件的尺寸稳定性)
- High quality controls for vacuum casting parts** (对于真空铸造部件的高质量控制)
- Low shrink and good resistance to yellowing** (低收缩和优异的耐黄变性)
- Magnificent Grey color** 华丽的灰色外观
- Outstanding machinable SLA material** (卓越的可加工性)

Physical Properties - Liquid Material 液态材料的物理性能

Appearance 外观	Grey 灰色
Density 密度	1.11~1.15g/cm ³ @ 25 °C
Viscosity 粘度	510~590 cps @ 25 °C
Dp 固化深度	0.135~0.158 mm
Ec 临界曝光量	8.3~9.2 mJ/cm ²
Building layer thickness 建造厚层	0.05~0.11mm

TOP31B - Page 2

Mechanical Properties of Post-Cured Material 固化后材料的机械性能		
MEASUREMENT 测试项目	TEST METHOD 测试方法	VALUE 数值
		90-minute UV post-cure 90 固化
Hardness 硬度, Shore D	ASTMD 2240	78~88
Flexural modulus 弯曲模量, Mpa	ASTMD 790	2722-2792
Flexural strength 弯曲强度, Mpa	ASTMD 790	69-76
Tensile modulus 拉伸模量, MPa	ASTMD 638	2649-2731
Tensile strength 拉伸强度, Mpa	ASTMD 638	41-58
Elongation at break 断裂伸长率	ASTMD 638	7-11%
Poisson`s Ratio 泊松比	ASTMD 638	0.4-0.44
Impact strength, notched Izod, J/m 缺口冲击强度	ASTMD 256	29-34
Heat deflection temperature, °C 热变形温度	ASTMD 648@66PSI	58~69
Glass transition, Tg 玻璃化转变温度, °C	DMA, E" peak	62~75
Coefficient of thermal expansion, 热膨胀系数, /°C	TMA(T<Tg)	90~103*E-6
Density 密度, g/cm3		1.12~1.18
Dielectric Constant 介电常数 60 Hz	ASTMD 150-98	4.2~5.0
Dielectric Constant 介电常数 1 kHz	ASTMD 150-98	3.3~4.2
Dielectric Constant 介电常数 1 MHz	ASTMD 150-98	3.2~4.0
Dielectric Strength 绝缘强度 kV/mm	ASTMD 1549-9a	12.8~16.1

注：TOP31B 使用及保存温度不宜过高，请在 25 摄氏度以下使用；使用及保存的相对湿度必须在 38RH% 以下。

Godart®8228

PRODUCT DESCRIPTION

Godart®8228 is a ABS like material which have super toughness, high hardness, and high strength.It can produce the 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, durability, and can meet the requirements of painting. As a kind of 3D printing material, it is suitable for parts with high impact and shock absorption.

KEY BENEFITS

Rigid, precision plastic like injection molding ABS

Resistant to temperature 65-70 °C

Suitable for Functional prototype, tools, Electrical components, chassis, phone cover

Post-process including painting, bonding or metallization

Suitable for SLA light curing 3D printing system with light source of 355nm

Physical Properties - Liquid Material 液态材料的物理性能

HEAT DEFLECTION TEMPERATURE (0.46 MPA)	56 °C
HARDNESS (SHORE D)	86
TENSILE STRENGTH	51.21 MPa
TENSILE MODULUS	2136 MPa
FLEXURAL STRENGTH	93.5 MPa
FLEXURAL MODULUS	2155 MPa
IMPACT STRENGTH	27 J/M

Lasty-R

PRODUCT DESCRIPTION 产品介绍

Lasty-R is an ABS like SL resin which has accurate and durable features. It is designed for solid state SLA platforms. Lasty-R can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries. The parts durability building with Lasty-R is over 6.5months.

Lasty-R 是一种具备精确和耐久特性的类 ABS 的立体光造型树脂。它被用于固态激光的光固化成型法。Lasty-R 可应用于汽车，医疗，消费电子等工业领域的母模，概念模型，一般部件，功能性部件的制作。用 Lasty-R 树脂制造的部件的耐久性长达 6.5 个月以上。

TYPICAL FEATURES 典型特点

- Liquid resin's medium viscosity, so easy recoating, easy clean parts and machines (中等粘度的液态树脂，确保其更容易涂层以及清洗部件和机器)
- Improved strength retained, improved dimensions retention of parts in humid condition (在潮湿环境中具有更好的强度及尺寸保持特性)
- need minimal part finishing (只需要极小的部件修饰)
- Long shelf life in machine (更长的实际使用期限)

TYPICAL BENEFITS 典型优点

- Need less part finishing time,easier post-curing (更少的部件完成时间)
- Building accurate and high tough parts with an improved dimensional stability (能够建造精确和高韧性的部件并提高了部件的尺寸稳定性)
- High quality controls for vacuum casting parts (对于真空铸造部件的高质量控制)
- YELLOW Color is more close to the ABS after curing (固化后淡黄的颜色更加接近于 ABS)
- Outstanding machinable SLA material (卓越的可加工性)
- Outstanding temperature resistant (卓越的耐高温性能)

Physical Properties - Liquid Material 液态材料的物理性能

Appearance 外观	White 白色
Density 密度	1.11~1.15g/cm ³ @ 25 °C
Viscosity 粘度	450~530 cps @ 27 °C
Dp 固化深度	0.14~0.16 mm
Ec 临界曝光量	7.1~8.1 mJ/cm ²
Building layer thickness 建造厚度	0.05~0.12mm

Lasty-R - Page 2

Mechanical Properties of Post-Cured Material 固化后材料的机械性能		
MEASUREMENT 测试项目	TEST METHOD 测试方法	VALUE 数值
		90-minute UV post-cure 90 固化
Hardness 硬度, Shore D	ASTMD 2240	78~90
Flexural modulus 弯曲模量, Mpa	ASTMD 790	2685 - 2775
Flexural strength 弯曲强度, Mpa	ASTMD 790	71 - 78
Tensile modulus 拉伸模量, MPa	ASTMD 638	2611 - 2765
Tensile strength 拉伸强度, Mpa	ASTMD 638	45 - 58
Elongation at break 断裂延长率	ASTMD 638	13 - 22%
Poisson`s Ratio 泊松比	ASTMD 638	0.40 - 0.45
Impact strength, notched Izod, J/m 缺口冲击强度	ASTMD 256	25 - 40
Heat deflection temperature, °C 热变形温度	ASTMD 648@66PSI	55 ~ 69
Glass transition, Tg 玻璃化转变温度, °C	DMA, E" peak	60 ~ 79
Coefficient of thermal expansion, 热膨胀系数, /°C	TMA(T<Tg)	85 ~ 99*E-6
Density 密度, g/cm3		1.12 ~ 1.18
Dielectric Constant 介电常数 60 Hz	ASTMD 150-98	4.1 ~ 5.1
Dielectric Constant 介电常数 1 kHz	ASTMD 150-98	3.4 ~ 4.2
Dielectric Constant 介电常数 1 MHz	ASTMD 150-98	3.1 ~ 4.1
Dielectric Strength 绝缘强度 kV/mm	ASTMD 1549-97a	12.7 ~ 16.9

注: Lasty-R 使用及保存温度不宜过高, 请在 25 摄氏度以下使用; 使用及保存的相对湿度必须在 38RH% 以下。

Somos® Taurus

PRODUCT DESCRIPTION 产品介绍

Somos® Taurus is the latest addition to the high impact family of stereolithography (SLA) materials from Somos®. Parts printed with this material are easy to clean and finish. The higher heat deflection temperature of this material increases the number of applications for the part producer and user. Somos® Taurus brings the combination of thermal and mechanical performance that until now has only been achieved using thermoplastic 3D printing techniques such as FDM and SLS.

With Somos® Taurus, you can create large, accurate parts with excellent surface quality and isotropic mechanical properties. Its robustness combined with a charcoal grey appearance makes it ideal for the most demanding functional prototyping and even end-use applications.

Key Benefits

- Superior strength and durability
- Wide range of applications
- Excellent surface and large part accuracy
- Heat tolerance up to 90°C
- Thermoplastic-like performance, look and feel

Ideal Applications

- Customized end-use parts
- Tough, functional prototypes
- Under the hood automotive parts
- Functional testing for aerospace
- Low volume connectors for electronics

Somos® Taurus - Page 2

Somos® Taurus Technical Data

Liquid Properties		Optical Properties		
Appearance	Charcoal	EC	10.5 mJ/cm ²	[critical exposure]
Viscosity	~350 cps @ 30 °C	DP	4.2 mils	[slope of cure-depth vs. ln (E) curve]
Density	~1.13 g/cm ³ @ 25 °C	E10	111 mJ/cm ²	[exposure that gives 0.254 mm (.010 inch) thickness]

Mechanical Properties		UV Postcure		UV & Thermal Postcure	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
D638-14	Tensile Modulus	2,310 MPa	335 ksi	2,206 MPa	320 ksi
D638-14	Tensile Strength at Yield	46.9 MPa	6.8 ksi	49.0 MPa	7.1 ksi
D638-14	Elongation at Break	24%		17%	
D638-14	Elongation at Yield	4.0%		5.7%	
D638-14	Poisson's Ratio	0.45		0.44	
D790-15e2	Flexural Strength	73.8 MPa	10.7 ksi	62.7 MPa	9.1 ksi
D790-15e2	Flexural Modulus	2,054 MPa	298 ksi	1,724 MPa	250 ksi
D256-10e1	Izod Impact (Notched)	47.5 J/m	0.89 ft-lb/in	35.8 J/m	0.67 ft-lb/in
D2240-15	Hardness (Shore D)	83		83	
D570-98	Water Absorption	0.75%		0.70%	

Somos® Taurus - Page 3

Thermal/Electrical Properties		UV Postcure		UV & Thermal Postcure	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
E831-14	C.T.E. -40 - 0°C (-40 - 32°F)	76.5 µm/m°C	42.5 µin/in°F	71.4 µm/m°C	39.7 µin/in°F
E831-14	C.T.E. 0 - 50°C (32 - 122°F)	105.3 µm/m°C	58.5 µin/in°F	103.4 µm/m°C	57.4 µin/in°F
E831-14	C.T.E. 50 - 100°C (122 - 212°F)	151.9 µm/m°C	84.4 µin/in°F	157.5 µm/m°C	87.5 µin/in°F
E831-14	C.T.E. 100 - 150°C (212 - 302°F)	171.4 µm/m°C	95.2 µin/in°F	173.4 µm/m°C	96.3 µin/in°F
D150-11	Dielectric Constant 60 Hz	4.6		4.8	
D150-11	Dielectric Constant 1 KHz	4.2		4.4	
D150-11	Dielectric Constant 1 MHz	3.7		3.5	
D149-09	Dielectric Strength	17.7 kV/mm	451 V/mil	17.3 kV/mm	440 V/mil
D648-16	HDT @ 0.46 MPa (66 psi)	62°C	144°F	91°C	196°F
D648-16	HDT @ 1.81 MPa (264 psi)	50°C	122°F	73°C	163°F
D3418-15	Glass Transition Temperature (DSC)	53°C	127°F	54°C	129°F

These values may vary and depend on individual machine processing and post-curing practices.

YG H-3001

PRODUCT DESCRIPTION 产品介绍

YG H-3001 is a stereolithography resin with high temperature resistance and high precision, and the printed workpiece is a special gray color. It is used in the stereolithography method of SLA. YG H-3001 can be widely used in the production of models and parts for industrial prototypes, automobiles, medical care, shoe molds, household appliances, mobile phones, home automation, building materials, and consumer electronic products.

TYPICAL FEATURES

High precision: Compared with ordinary products on the market, the shrinkage ratio will be reduced by 30%.

Physical Properties - Liquid Material 液态材料的物理性能

Appearance 外观	White 白色
Proportion 比重	1.1/cm ³ @ 25 °C
Viscosity 粘度	580 cps @ 28 °C
Ec 临界曝光量	9.8 mJ /cm ³
Dp 固化深度	0.10mm
Building layer thickness 建造厚层	0.1mm

Mechanical Properties of Post-Cured Material 固化后材料的机械性能

MEASUREMENT 测试项目	TEST METHOD 测试方法	VALUE 数值
Hardness 硬度, Shore D	ASTM D 2240	85D
Flexural modulus 弯曲模量, Mpa	ASTM D 790	2900 - 3220
Flexural strength 弯曲强度, Mpa	ASTM D 790	64 - 69
Tensile modulus 拉伸模量, MPa	ASTM D 638	1900 - 2090
Tensile strength 拉伸强度, Mpa	ASTM D 638	40 - 44
Elongation at break 断裂延长率	ASTM D 638	13 - 20%
Impact strength, notched Izod, J/m 缺口冲击强度	ASTM D 256	34.4
Heat deflection temperature, °C 热变形温度	ASTM D 648@66PSI	99.6°C

Lasty-702

PRODUCT DESCRIPTION 产品介绍

Lasty-702 is an ABS like SL resin which has accurate and durable features. It is designed for solid state SLA platforms. Lasty-702 can be applied in master patterns, concept models, general parts and functional prototypes in the field of automotive, medical and consumer electronics industries. The parts durability building with Lasty-702 is over 6.5 months.

Lasty-702 是一种具备精确和耐久特性的类 ABS 的立体光造型树脂。它被用于固态激光的光固化成型法。Lasty-702 可应用于汽车，医疗，消费电子等工业领域的母模，概念模型，一般部件，功能性部件的制作。用 Lasty-702 树脂制造的部件的耐久性长达 6.5 个月以上。

TYPICAL FEATURES 典型特点

- **Liquid resin`s medium viscosity, so easy recoating, easy clean parts and machines** 中等粘度的液态树脂，确保其更容易涂层以及清洗部件和机器
- **Improved strength retained, improved dimensions retention of parts in humid condition** 在潮湿环境中具有更好的强度及尺寸保持特性
- **need minimal part finishing** 只需要极小的部件修饰
- **Long shelf life in machine** 更长的实际使用期限

TYPICAL BENEFITS 典型优点

- **Need less part finishing time, easier post-curing** (更少的部件完成时间)
- **Buliding accurate and high tough parts with an improved dimensional stability** (能够建造精确和高韧性的部件并提高了部件的尺寸稳定性)
- **High quality controls for vacuum casting parts** (对于真空铸造部件的高质量控制)
- **Low shrink and good resistance to yellowing** 低收缩和优异的耐黄变性
- **Magnificent yellow color** 华丽的黄色外观
- **Outstanding machinable SLA material** (卓越的可加工性)

Physical Properties - Liquid Material 液态材料的物理性能

Appearance 外观	White 白色
Density 密度	1.11 ~ 1.15g/cm ³ @ 25 °C
Viscosity 粘度	510 ~ 590 cps @ 25 °C
Dp 固化深度	0.135 ~ 0.158 mm
Ec 临界曝光量	8.1 ~ 8.9 mJ/cm ²
Building layer thickness 建造厚层	0.05 ~ 0.12mm

Lasty-702 - Page 2

Mechanical Properties of Post-Cured Material 固化后材料的机械性能		
MEASUREMENT 测试项目	TEST METHOD 测试方法	VALUE 数值
		90-minute UV post-cure 90 固化
Hardness 硬度, Shore D	ASTMD 2240	78~88
Flexural modulus 弯曲模量, Mpa	ASTMD 790	2722 - 2792
Flexural strength 弯曲强度, Mpa	ASTMD 790	69 - 76
Tensile modulus 拉伸模量, MPa	ASTMD 638	2649 - 2731
Tensile strength 拉伸强度, Mpa	ASTMD 638	41 - 58
Elongation at break 断裂延长率	ASTMD 638	7 - 11%
Poisson`s Ratio 泊松比	ASTMD 638	0.40 - 0.44
Impact strength, notched Izod, J/m 缺口冲击强度	ASTMD 256	29 - 34
Heat deflection temperature, °C 热变形温度	ASTMD 648@66PSI	58 ~ 69
Glass transition, Tg 玻璃化转变温度, °C	DMA, E" peak	62 ~ 75
Coefficient of thermal expansion, 热膨胀系数, /°C	TMA(T<Tg)	90 ~ 103*E-6
Density 密度, g/cm ³		1.12 ~ 1.18
Dielectric Constant 介电常数 60 Hz	ASTMD 150-98	4.2 ~ 5.0
Dielectric Constant 介电常数 1 kHz	ASTMD 150-98	3.3 ~ 4.2
Dielectric Constant 介电常数 1 MHz	ASTMD 150-98	3.2 ~ 4.0
Dielectric Strength 绝缘强度 kV/mm	ASTMD 1549-97a	12.8 ~ 16.1

注：Lasty-702 使用及保存温度不宜过高，请在 25 摄氏度以下使用；使用及保存的相对湿度必须

Crysta-8QEF1

An optically clear stereolithography material tailored for colorless, functional parts with excellent temperature resistance

PRODUCT DESCRIPTION

Crysta-8QEF1 is a clear SL 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

- Liquid resin`s medium viscosity, so easy recoating, easy clean parts and machines
- Improved strength retentin, improved dimensions retention of parts in humid condition
- Good green strength, so need minimal part finishing
- Easy burning completely

TYPICAL BENEFITS

- Superior clear,building patrs with outstanding clarity and excellent accuracy
- Need less part finishing time,easier post-curing
- Suitable for casting

Physical Properties - Liquid Material 液态材料的物理性能

Appearance 外观	Clear 透明
Density 密度	1.12g/cm3 @ 25 °C
Viscosity 粘度	312~420cps @ 25 °C
Dp 固化深度	0.18 mm
Ec 临界曝光量	9.8-12mJ/cm2
Building layer thickness 建造厚层	0.1mm

Crysta-8QEF1 - Page 2

Mechanical Properties of Post-Cured Material 固化后材料的机械性能		
MEASUREMENT 测试项目	TEST METHOD 测试方法	VALUE 数值
		90-minute UV post-cure 90 固化
Hardness 硬度, Shore D	ASTMD 2240	76~82
Flexural modulus 弯曲模量, Mpa	ASTMD 790	2570 - 2860
Flexural strength 弯曲强度, Mpa	ASTMD 790	75 - 81
Tensile modulus 拉伸模量, MPa	ASTMD 638	2490 - 2660
Tensile strength 拉伸强度, Mpa	ASTMD 638	44 - 62
Elongation at break 断裂延长率	ASTMD 638	7 - 11%
Impact strength, notched Izod, J/m 缺口冲击强度	ASTMD 256	27 - 35
Heat deflection temperature, °C 热变形温度	ASTMD 648@66PSI	40 ~ 51
Glass transition, Tg 玻璃化转变温度, °C	DMA, E" peak	42 ~ 58

注：Crysta-8QEF1 使用及保存温度不宜过高，请在 25 摄氏度以下使用；使用及保存的相对湿度必须在 38RH%以下。

FS3300PA

General Properties	
Bulk Density	0.48 g/cm ³
Density of Parts	0.95 g/cm ³
Color	white

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	
Tensile Strength GB/T1040.2-2006	46 MPa
Tensile Modulus GB/T1040.2-2006	1602 MPa
Elongation at Break GB/T1040.2-2006	36 %
Flexural Strength GB/T1040.2-2006	46.3 MPa
Flexural Modulus GB/T1040.2-2006	1300 MPa
Impact Strength (notched Izod) GB/T 1843-2008	4.9 KJ/m ²
Impact Strength (unnotched Izod) GB/T 1843-2008	13.2 KJ/m ²

FS3400GF

General Properties	
Bulk Density	0.67 g/cm ³
Density of Parts	1.26 g/cm ³
Color	gray

Thermal Properties	
Melting Point	184 °C
Heat Deflection Temp (HDT) 1 . 8 Mpa GB/T 1040.2-2006	88 °C
Heat Deflection Temp (HDT) 0 . 45 Mpa GB/T 1040.2-2006	162 °C

Mechanical Properties	
Tensile Strength GB/T1040.2-2006	44 MPa
Tensile Modulus GB/T1040.2-2006	3500 ~ 7800 MPa
Elongation at Break GB/T1040.2-2006	5 %
Flexural Strength GB/T1040.2-2006	68 MPa
Flexural Modulus GB/T1040.2-2006	2415 MPa
Impact Strength (notched Izod) GB/T 1843-2008	4.13 KJ/m ²
Impact Strength (unnotched Izod) GB/T 1843-2008	19.28 KJ/m ²

TPU

LUVOSINT X92A-2

Ester based thermoplastic polyurethane TPU Powder, white color

Physical Properties		Test Method	Specimen	Units	Typical Value
Specific Gravity		ISO 1183	Sintered part	g/cm ³	1.2
Water Absorption	23 °C, 24 h			%	< 0.5
Melt Volume Rate	MVR190°C/2.16 kg	ISO 1133	Power	cm ³ /10 min	18.0
Glass Transition Temp		ISO 6721-1	Sintered part	°C	-13.6
Shrinkage		Measured on test prints		%	3.0

Mechanical Properties					
at 23 °C/ 50 % rh (according to build orientation)					
Shore Hardness 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	mm ³	31
Abrasion Resistance (z-direction)		ISO 4649	Sintered part	mm ³	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/cm ³	0.457
Part bed powder density			g/cm ³	0.600

TPU - Page 2

Powder Properties

Powder for laser sintering (additive manufacturing). Elastic parts with high strength and high abrasive resistance for shoe and sports industry, pipes, sealings, prosthetics and many more applications.

General Properties			
General			
	In general LUVOSINT X92A-2 can be processed on conventional lasersinter machines while observing the usual technical guidelines. In contrast to conventional polyamide powders relative-ly low temperatures in the process chamber should be used here. At higher temperatures above 100 °C powder flowability and process stability will decrease. Aspiration is recommended due to formation of fume.		
Predrying			
	No predrying necessary. The powder should be de-agglomerated by using a screening process (250 microns sieve open-ing) before processing.		
Processing Parameters			
Due to the large variety of machines and part geometries given process parameters can only be seen as an orientation.			
	Please use material data base of Polystyrene and change process parameters as follows:		
	Process Temperature	°C	100
	Piston Heater	°C	85
	Scan Speed	mm/s	4000
	Hatch Distance	mm	0.20
	Layer Thickness	mm	0.15
	Laser Power	W	40
Delivery Form & Storage			
	The material will be delivered as 25 kg boxes on pallets. Preferably storage should be effected in dry and normally temperatured rooms.		

VisiJet Armor M2G-CL

Properties	ASTM	
Color		Clear
Tensile Strength (MPa)	D638	30-35
Tensile Modulus (MPa)	D638	1500-2000
Elongation at Break	D638	55-65
Flexural Strength (MPa)	D790	40-45
Flexural Modulus (MPa)	D790	1000-1200
Impact Strength(Notched Izod) (J/m)	D256	40-50
Shore A Hardness	2240	N/A
Shore D Hardness	2240	70
Water Absorption (24 hr)	D570	
Heat Distortion Temp@ 0.45 MPa	D648	47 °C
Heat Distortion Temp@ 1.82 MPa	D648	43 °C
Melting Point		N/A
Softening Point		N/A
Description		Transparent clear

PLA

Properties	
Density 密度, g/cm ³	1.24 g/cm ³
Tensile strength 拉伸强度, Mpa	65 Mpa
Elongation at break 断裂延长率	8 %
Flexural strength 弯曲强度, Mpa	97 Mpa
Flexural modulus 弯曲模量, Mpa	3600 Mpa
Impact strength,notched Izod, J/m 缺口冲击强度	4 KJ/m ²
Heat deflection temperature, °C 热 变形温度	56 (°C,0.45Mpa)

ABS

Properties	
Appearance 外观	Filiform 丝状
Smell 气味	Tasteless, with a small amount of special smell when melting 无味, 熔融时有少量特殊气味
Spontaneous combustion point 自燃点	>466 °C
Flash point 闪点	>400 °C
Melting temperature 熔融温度	170 °C
Density 密度	1.02 kg/L
Solubility 溶解性	Insoluble in water 不溶于水
Tensile strength 拉伸强度, Mpa	41.6 Mpa
Flexural strength 弯曲强度, Mpa	56.6 Mpa
Impact strength 冲击强度	2
Elongation at break 断裂延长率	30 %
Tensile strength 张力强度	30 Mpa
Heat deflection temperature, °C 热变形温度	86 - 100 °C
Decomposition temperature 分解温度	> 260 °C
Processing temperature 加工温度	180 - 230 °C
Print temperature 打印温度	230 - 260 °C

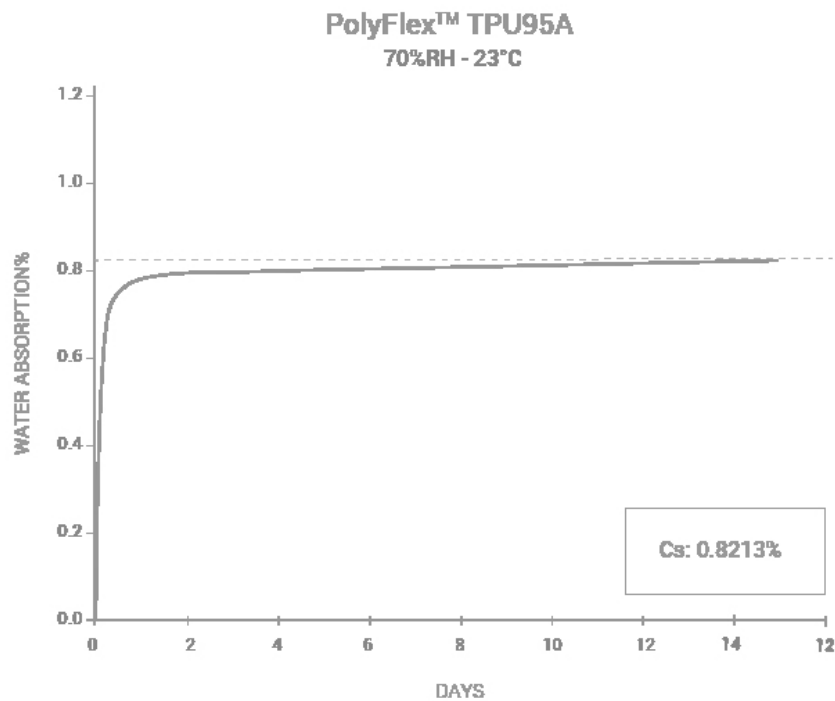
TPU95

PolyFlex™ TPU95 is a thermoplastic polyurethane (TPU) based filament specifically engineered to work on most desktop 3D printers. It has a shore hardness of 95A and can stretch more than 3 times its original length.

PHYSICAL PROPERTIES		
Property	Testing Method	Typical Value
Density	ISO1183, GB/T1033	1.20-1.24 g/cm ³ at 23 °C
Melt index	210 °C, 1.2 kg	3-6 g/10min
Light transmission	N/A	N/A
Flame retardancy	N/A	N/A

CHEMICAL RESISTANCE DATA	
Property	Testing Method
Effect of weak acids	Not resistant
Effect of strong acids	Not resistant
Effect of weak alkalis	Not resistant
Effect of strong alkalis	Not resistant
Effect of organic solvent	No data available
Effect of oils and grease	No data available

MOISTURE ABSORPTION CURVE



PC

PHYSICAL PROPERTIES		
Tension coefficient 张力系数	D638	68 MPa
Tensile strength 张力强度	D638	2, 280 MPa
Tensile elongation 张力伸长率	D638	4.80%
Flexibility coefficient 柔性系数	D710	52 MPa
Flexible strength 柔性强度	D790	2, 234 MPa
Flexible elongation 柔性伸长率	D790	> 80%
AI impact, notched 艾式冲击, 有缺口	D256	53 J/m
AI impact, no notch 艾式冲击, 无缺口	D256	320 J/m
Thermal deflection (HDT) @ 66 psi, not annealed 热挠曲 (HDT) @66 psi, 未退火	ASTM D648	138°C
Thermal deflection (HDT) @ 66 psi, not annealed 热挠曲 (HDT) @66 psi, 未退火	ASTM D648	127°C
Vicat softening temperature (B / 50) 维卡软化温度 (B/50)	ASTM D1525	139°C
Thermal expansion rate (flow - 40F to 100F) 热膨胀率 (flow -40F 到 100F)	ASTM E831	3.8E-05 in/in/F
Thermal expansion rate (XFlow - 40F to 100F) 热膨胀率 (xflow -40F 到 100F)	ASTM E831	
Glass transition 玻璃化转变	DSC (SSYS)	161°C
Proportion 比重	ASTM D792	1.2
Vertical combustion test (flame) 垂直燃烧测试 (火焰)	UL 94	V2, 1.1 mm
Rocking hardness 洛化硬度	ASTM D785	R115
Conductivity s (kV / mm) 导电性 S (KV/mm)	IEC 60112	15
Conductivity C (60Hz) 导电性 C (60Hz)	IEC 60250	3.17
Conductivity C (1MHz) 导电性 C (1MHz)	IEC 60250	2.96
Layer thickness 层厚		0.33mm,0.254mm,0.178mm,0.127mm
Supporting material 支撑材料		Solid support 固态支撑
Colour 颜色		white 白色

ASA

PHYSICAL PROPERTIES	
Print Temp, °C	220-260
Bed Temp, °C	90-110
Density, g/cm ³	1.00
Heat Distortion Temp, °C,0.45MPa	54
Melt Flow Index, g/10min	10 - 15(220°C/10KG)
Tensile Strength, MPa	50
Elongation at Break, %	30
Flexural Strength, MPa	35
Flexural Modulus, MPa	4300
IZOD Impact Strength, KJ/m ²	19

TPU

PHYSICAL PROPERTIES			
Test 检测项目	Company 单位	Test standard 测试标准	Test results 检验结果 (平均值)
Hardness (a) 硬度 (A)	/	ASTM:D2240-05	60-75
Viscosity(25°C) 粘度(25°C)	mpa.s	ASMT:D4212-10	980.0
Tear strength 撕裂强度	KN/m	ASMT:D624-98	47.2
Tensile strength 抗拉强度	Mpa	ASMT:D412-06	7.9
Elastic modulus 弹性模量	Mpa	ASMT:D412-06	2.0
Elongation at break % 断裂伸长率	%	ASMT:D412-06	255.1%

PA12

Category	MEASUREMENT	VALUE	TEST METHOD
General properties	Powder melting point (DSC)	186°C/367°F	ASTM D3418
	Particle size	58µm	ASTM D3451
	Powder density	0.48 g/ cm ³ (0.017 lb / inch ³)	ASTM D1895
	Component density	1.3 g / cm ³ (0.047 lb / inch ³)	ASTM D792
Mechanical properties	Tensile strength, maximum load 17, XY	30 MPa/4350 psi	ASTM D638
	Tensile strength, maximum load 11, Z	30 MPa/4350 psi	ASTM D638
	Tensile modulus, MPa	2800 MPa/406 ksi	ASTM D638
	Tensile strength, Mpa	2900 MPa/421 ksi	ASTM D638
	Elongation at break	6.5%	ASTM D638
	Impact strength,notched Izod, J/m	2.7 KJ/m ²	ASTM D256 测试方法 A
Thermal properties	Heat deflection temperature, °C (0.45 MPa, 66 psi), Z	173°F/344°F A	ASTM D648 测试方法 A
	Heat deflection temperature, °C (1.82 MPa, 264 psi), Z	121°F/250°F	ASTM D648 测试方法 A

Stainless Steel 316L

Properties		
Physical properties	Particle size	15 ~ 53 μ m
	Form	Spherical
	Liquidity	40 S
	Apparent density	3.9 g/cm ³
Molded part performance	Density	\geq 99%
	Tensile strength	\geq 560Mpa
	The yield strength	\geq 480Mpa

Titanium Alloy

Properties		
Physical properties	Particle size	15 ~ 53 μ m
	Form	Spherical
	Liquidity	45 S
	Apparent density	2.5 g/cm ³
Molded part performance	Density	\geq 99%
	Tensile strength	\geq 600 Mpa
	The yield strength	\geq 540 Mpa

Aluminum Alloy

Properties		
Physical properties	Particle size	15 ~ 53 μ m
	Form	Spherical
	Liquidity	150 S
	Apparent density	1.45 g/cm ³
Molded part performance	Density	\geq 95%
	Tensile strength	\geq 330 Mpa
	The yield strength	\geq 245 Mpa

Die Steel

Properties		
Physical properties	Particle size	15 ~ 53µm
	Form	Spherical
	Liquidity	40 S
	Apparent density	4.3 g/cm ³
Molded part performance	Density	≥99%
	Tensile strength	≥1090 Mpa
	The yield strength	≥1000 Mpa

Nickel base superalloy (GH4169)

Properties		
Physical properties	Particle size	15 ~ 53µm
	Form	Spherical
	Liquidity	50 S
	Apparent density	4.8 g/cm ³
Molded part performance	Density	≥98%
	Tensile strength	≥400 Mpa
	The yield strength	≥260 Mpa