HLH

3D Printing Material Specification Sheets

info@HLHPrototypes.com | +86-755-8256-9129 | Rapid Manufacturing Solutions

Table of Contents

Material Reference	CV-UV 9400	Page 3-4
Material Reference	AlSi10Mg	Page 5
Material Reference	FS3300PA	Page 6
Material Reference	FS3400GF	Page 7
Material Reference	SOMOS 8000	Page 8
Material Reference	9000	Page 9

CV-UV 9400

C-UV 9400 TECHNICAL DATA SHEET

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 duability building with C-UV 9400 is over 6.5months.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-UV 9400 可应用于于汽车，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

CV-UV 9400 – Page 2

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 ℃
Viscosity 粘度	355 cps @ 28 ℃
Dp 固化深度	0.145 mm
Ec 临界曝光量	9.3 mJ/cm^2
Building layer thickness 建造层厚	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 分钟紫外固化
Hardness 硬度, Shore D	ASTM D 2240	83
Flexural modulus 弯曲模量, Mpa	ASTM D 790	2,692-2,775
Flexural strength 弯曲强度, Mpa	ASTM D 790	69- 74
Tensile modulus 拉伸模量, MPa	ASTM D 638	2,189-2,395
Tensile strength 拉伸强度, MPa	ASTM D 638	27-31
Elongation at break 断裂延长率	ASTM D 638	12 -20%
Impact strength,notched lzod, J/m 缺口冲击强度	ASTM D 256	58 - 70
Heat deflection temperature, ℃ 热变形温度	ASTM D 648 @66PSI	52
Glass transition,Tg 玻璃化转变温度，℃	DMA，E″peak	62
Coefficient of thermal expension, 热膨胀系数, /℃	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。

AlSi10Mg

材 料 手 册
Material Data Sheet

基本信息
Basic Information

材 料 Material	FS AlSi10Mg

化学成分
Chemical Composition

元素 Element	含量 Content
Si	9-11 wt.%
Mg	≤0.45 wt.%
Zn	≤0.10 wt.%
Cu	≤0.05 wt.%
Fe	≤0.15 wt.%
Ni	≤0.05 wt.%
Al	余量 Balance

工件性能
Properties of Parts

	原始态 As Built	热处理态① Heat treated①
密度 Density	≥2.65 g/cm^3	≥2.65 g/cm^3
抗拉强度(R_m) Tensile Strength(R_m)	430±30 MPa	350±30MPa
屈服强度($R_{p0.2}$) Yield Strength($R_{p0.2}$)	276±30 MPa	240±30MPa
断后伸长率(A_{50mm}) Elongation After Fracture(A_{50mm})	3.0±1.0 %	6.0±1.0%

①热处理工艺：300℃保温 2h
①Heat treatment: 2h at 300℃

声明：以上参数均为华曙测试，工件实际性能可能会因原料批次、烧结参数、操作条件等不同而有差异。

Disclaimer: Parameters above are tested by ourselves. Actual part properties may vary significantly from those listed above based on raw material batch, processing parameters and operating conditions.

FS3300PA

General Properties	FS 3300PA Nylon Powder
Bulk Density	0.48 g/cm³
Density of Parts	0.95 g/cm³
Color	White

Thermal Properties	
Melting Point	183°C
Heat Deflection Temp(HDT) 1.8 MPa GB/T 1634.2-2004	83.5°C
Heat Deflection Temp(HDT) 0.45 MPa GB/T 1634.2-2004	146.2°C

Mechanical Properties	
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 9341-2008	46.3 MPa
Flexural Modulus GB/T 9341-2008	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

FS3400GF

General Properties	FS 3400GF Glass bead Filled
Bulk Density	0.67 g/cm³
Density of Parts	1.26 g/cm³
Color	Gray

Thermal Properties	
Melting Point	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	
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

info@HLHPrototypes.com | +86-755-8256-9129 | Rapid Manufacturing Solutions

SOMOS 8000

DSM Somos 8000 Specification

Durable, Opaque, white, waterproof resin
Suitable to（355nm）SLA system

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℃）
Density	~1.3g/cm^3(25℃)

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 lzod, J/m	0.2~0.3J/cm	1.6J/cm
Water Absorption	0.35%	0.20~0.45%
Glass transition,Tg	39~50℃	N/A
Heat deflection temperature, ℃ 0.46MPa 1.81MPa	 46~60℃ 49～55℃	 94~207℃ 86.4~194℃

9000

激光快速成型 3D 模型光敏树脂

超高韧性　类 ABS 白色 SLA 树脂
High toughness white SLA resin
similar to ABS

产品/Product		联泰 9000
物理性质/Physical properties		
密度/Density	g/cm3	1.13
粘度@28℃/Viscosity@28℃	cP	355
粘度@30℃/Viscosity@30℃	cP	320
固化深度/Depth of Cure	mm	0.14
临界曝光量/Critical exposure amount	mj/cm2	9.3
建造层厚/Construction thickness	mm	0.1
后固化方法/Post curing method		90 分钟 UV 固化/90 minutes UV post cure
固化后材料性能/Post Cured Material		
硬度/Hardness	shoreD	86
弯曲模量/Flexural modulus	Mpa	2,692-2,775
弯曲强度/Flexural strength	Mpa	69- 74
拉伸模量/Tensile modulus	Mpa	2,589-2,695
拉伸强度/Tensile stregth	Mpa	38-56
断裂延长率/Elongation at break	%	12-20
缺口冲击强度/Impact strength,notched Izod	j/m	48-55
热变形温度/Heat deflection temperature	℃	52
玻璃化转变温度/Glass transition	℃	62
树脂特点		做件刚性较好，锐角极好，底部收缩极小，表面细节极佳，白色极其质感，做件速度尚可，韧性极好
Resin Features		Rigidly do better, acute excellent, bottom minimal shrinkage, excellent surface detail, extremely white texture, do pieces of speed is acceptable, excellent toughness
适合的行业及应用		耐久性好，细节要求高的行业，韧性极好可加工及打螺丝和刚性好，非常适合于手板行业，做汽车部件，玩具，工艺品等，适合批量生产消费品及电子产品
For industries and applications		Durability, demanding details of the industry, excellent toughness and machinability hit the screw and good rigidity, very suitable for palm industry, making car parts, toys, crafts, suitable for mass production of consumer goods and electronic products
和 GP-plus 树脂对比的优点		锐角好，底部收缩小，粘度适中，尺寸稳定性好，韧性极好，表面更光洁
And advantages of the GP-plus resin contrast		Good acute angle, the bottom shrinkage, moderate viscosity, good dimensional stability, excellent toughness, surface is smooth
和 GP-plus 树脂对比的缺点		做件速度稍慢一点，300mw 功率单层扫描可做到 6000-8000mm/s 左右
And disadvantages of GP-plus resin contrast		Do a little slower speed parts, 300mw power single scan can be done 6000-8000mm / s or so

info@HLHPrototypes.com | +86-755-8256-9129 | Rapid Manufacturing Solutions