



Enlighten Materials

# Dental resins for 3D printing



# New AA TEMP 3D printing resin for temporary restorations

Enlighten AA TEMP 3D printing resin for temporary restorations, is a biocompatible resin with high strength, high surface hardness and low shrinkage. It can be used for DLP, SLA and LCD 3D printers, such as Ackuretta, MiiCraft, Form 2 and Phrozen 3D printers. It can also work for 385 and 405nm light source. Currently, we are working on its FDA submission for class II medical devices.

Property	ISO standard	Requirement	Our results*
Flexural strength	ISO10477	≥50 MPa	82.35 MPa
Water sorption	ISO10477	≤40 µg/mm <sup>3</sup>	<25 µg/mm <sup>3</sup>
Water solubility	ISO10477	≤7.5 µg/mm <sup>3</sup>	<1.5 µg/mm <sup>3</sup>
Surface Hardness	ISO187	≥80 Shore D	84.65
Viscosity	N/A	N/A	~498 cps
Cytotoxicity test	ISO10993-5	Non-cytotoxic	Comply
Irritation test	ISO10993-10	Cause no irritation	Comply
Sensitization test	ISO10993-10	Cause no sensitivity	Comply
Acute systemic toxicity	ISO10993-11	Cause no acute systemic toxicity	Comply
Genotoxicity test	ISO10993-3	Cause no genotoxicity	Comply

\*All the tests were performed on specimens printed from MiiCraft 125 DLP 3D printers with 30 minutes of post-curing at 60°C using Formcure.



# New BB BASE 3D printing resin for denture base

Enlighten BB BASE 3D printing resin for denture base, is a biocompatible resin with high strength, high surface hardness and low shrinkage. It can be used for DLP, SLA and LCD 3D printers, such as Ackuretta, MiiCraft, Form 2 and Phrozen 3D printers. It can also work for 385 and 405nm light source. Currently, we are working on its FDA submission for class II medical devices.

Property	ISO standard	Requirement	Our results	R2	R1	A2
Flexural strength	ISO20795-1	≥65 MPa	>85.2 MPa			
Flexural modulus	ISO20795-1	≥2000 MPa	>2049 MPa	DLP	SLA	LCD
Water sorption	ISO20795-1	≤32 µg/mm <sup>3</sup>	<26.5 µg/mm <sup>3</sup>			
Water solubility	ISO20795-1	≤1.6 µg/mm <sup>3</sup>	<1 µg/mm <sup>3</sup>	385 nm	405 nm	
Residual MMA monomer	ISO20795-1	≤2.2 %(w/w)	0%			
Surface Hardness	ISO187	≥80 Shore D	87.25			
Viscosity	N/A	N/A	~1180 cps	1kg		
Cytotoxicity test	ISO10993-5	Non-cytotoxic	Comply			
Irritation test	ISO10993-10	Cause no irritation	Comply			
Sensitization test	ISO10993-10	Cause no sensitivity	Comply			
Acute systemic toxicity	ISO10993-11	Cause no acute systemic toxicity	Comply			
Genotoxicity test	ISO10993-3	Cause no genotoxicity	Comply			

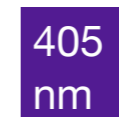
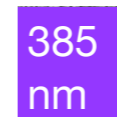
\*All the tests were performed on specimens printed from MiiCraft 125 DLP 3D printers with 30 minutes of post-curing at 60°C using Formcure.

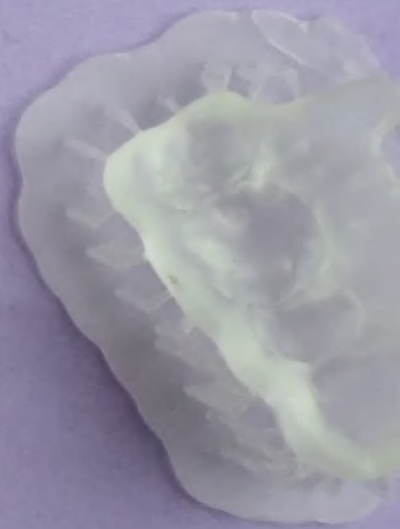


# CC TRAY 3D printing resin for custom tray

Enlighten CC TRAY 3D printing resin for custom tray, is a biocompatible resin with high strength, high surface hardness and low shrinkage. It can be used for DLP, SLA and LCD 3D printers, such as Ackuretta, MiiCraft, Form 2 and Phrozen 3D printers. It can also work for 385 and 405nm light source. Currently, it has obtained the approval for TFDA class I medical devices.

Property	Our results
Flexural strength	95 MPa
Flexural modulus	2397 MPa
Surface Hardness	~78
Viscosity	~740 cps
Biocompatibility	Comply



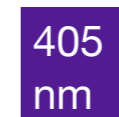
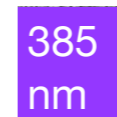




# DD GUIDE 3D printing resin for surgical guide

Enlighten DD GUIDE 3D printing resin for surgical guide, is a Class I biocompatible resin with high strength, high surface hardness and low shrinkage. It was approved by TFDA and CE-registered. DD guide has 3 different versions, namely DD guide, DD guide for LCD, and DD guide for SLA. So it can be used for almost all printers in the market, such as Ackuretta, MiiCraft, Form 2 and Phrozen 3D printers. It has been used extensively by the universities, medical centers and dental clinics in Taiwan.

Property	Our results
Flexural strength	90 MPa
Flexural modulus	1907 MPa
Surface Hardness	≥80 Shore D
Viscosity	720 cps
Biocompatibility	Comply

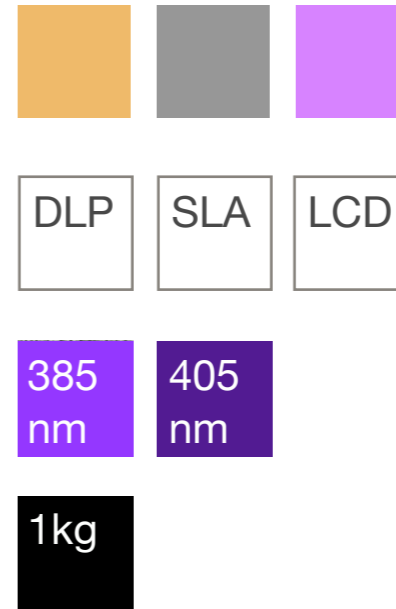




# DENTAL MODEL 3D printing resin

Enlighten DENTAL MODEL 3D printing resin for custom tray, is a biocompatible resin with high strength, high surface hardness and low shrinkage. It can be used for DLP, SLA and LCD 3D printers, such as Ackuretta, MiiCraft, Form 2 and Phrozen 3D printers. It can also work for 385 and 405nm light source.

Property	Our results
Flexural strength	92 MPa
Flexural modulus	1875 MPa
Surface Hardness	86





## About us

Enlighten Materials is a spin-off company from the Department of Dentistry, National Yang-Ming University, Taiwan. It was founded in 2017. Our people, including chemical engineer, dental technicians, dentists and university professors, are experts in 3D printing. Our goal is to provide world-class 3D printing materials, and lower the barriers for dentists and other industry to enter the 3D printing world.

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