

# PRECISE™ Dental Model Resin



Precise™ Almond - Colours may vary from screen image



## TECHNICAL DATASHEET

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### Company Information

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### Product Description

A versatile, high-quality, and easy-to-use material for 3D printing dental models, compatible with DLP & MSLA 3D printers and offering exceptional precision, dimensional stability, and a gypsum-like finish for orthodontic, diagnostic, prototype, educational and implant models.

**SKU(s): DPR-39820W, DPS-39830W, DPR-3984AL, DPS-3985AL**

**Material: Urethane Based Photopolymer**

**Available Colours: Almond & Ortho White**

**Suitable Models: Diagnostic | Orthodontic | Prototypes | Implant**

NB: This resin is not approved for intra-oral applications.



/product-category/resins/dental-resins/precise



[www.monocure3d.com.au](http://www.monocure3d.com.au)

# PRECISE™

High-Definition Dental Model Resin



**PRECISE™ HD dental resin is an easy-to-use, high-quality & pin-point accurate. The smooth matte surface finish makes this a popular choice for orthodontics, diagnostics, prototypes, aligners and implant models. This is the preferred resin choice by most dental labs due to its high-tensile strength once post-cured.**

## PRINTING TIPS

- ✓ Can be printed between 10 and 100-micron layer heights.
- ✓ 3D models should be designed solid. If hollowing is required, ensure drain holes are included.
- ✓ To assist with unsupported areas, ensure you use well-positioned, solid supports.
- ✓ Add a 1-second wait after the print setting to allow the material to cool after curing before starting to lift the build plate.



High accuracy  
No shrinking or warping formulation.



Hard surface  
90+ Shore D after post-curing.



Gypsum-like Texture  
High opaqueness with a matte surface finish.



Multi-compatible  
A version to suit all DLP/MSLA 3D printers.

# TECHNICAL DATASHEET

## RESIN COMPATIBILITY: DLP & MSLA 3D Printers Guide

PRECISE™ Dental Model Resin is available in two colour shades: Almond and Ortho White. To accommodate the varying output power of DLP and MSLA printers, we offer two distinct formulations tailored to each system type.

Select the DLP formula if your printer employs a Digital Light Processing (DLP) projector module to expose the layers. Compatible DLP printer brands and models include, but are not limited to, SprintRay, Peopoly Moai, Asiga UV-Max & Pro 4K, Phrozen Make, B9 Creator, Flashforge Hunter, XYZ Nobel, and Kudo Titan.

For 3D printers utilising a Masked Stereolithography Apparatus (MSLA) system with an LCD screen and LED array to expose the layers, we recommend the standard MSLA formula. Compatible MSLA printers encompass Anycubic, Phrozen, Creality, Elegoo, Epax, Peopoly, Prusa, Uniz, Wanhao, WOW SparkMaker, and Kelant.



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## MECHANICAL PROPERTIES

**Method Code:** ASTM D638-14

**Product:** Monocure 3D PRECISE™ Resin (50µm)

**Acceptance Code:** Supply Findings

**Specimen Type:** Rectangular beam samples (Type IV)

**Equip' Serial No:** UTM Serial No. 075

**Conditioning:** Tested at ambient temperature



SKUs	DPR-39820W, DPS-39830W, DPR-3984AL, DPS-3985AL
Cross-Sectional Area (mm <sup>2</sup> )	26.47
Max Force (kN)	1.64
Tensile Strength (MPa)	64
Elongation at Break (%)	3.0
Young's Modulus (GPa)	1.8

Flexural Band Span (mm)	86.23
Max Load Applied (N)	380
Flexural Stress (MPa)	186
Max Flex Strain (mm/mm)	0.5
Shore Hardness (D)	91
Heat Deflection Temp (C°)	71°C @ 0.45MPa

PRECISE™ Dental Resin was created with the assistance of leading dental industry professionals. The non-brittle formula was designed to print ultra-high-definition models. The gypsum-like matte texture, low-flexibility, and high-tensile strength formula makes PRECISE™ the optimal choice for 3D printing accurate 3D dental models.

## TECHNICAL DATASHEET

Tensile (MPa)	Low	64	High
Young's Modulus (Gpa)	Pliable	1.8	Stiff
Elongation at Break (%)	Low	3	High
Flexural Stress(MPa)	Low	186	High
Shore Harness (D)	Soft	91	Hard
Heat Deflection Temp (C°)	Low	71	High





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## MSLA LIQUID PROPERTIES

SKUs	DPR-3984AL, DPR-3982OW
Colour(s)	Almond and Ortho White
Viscosity	300cps @ 25°C (BrookfieldRVT)
Odour	Negligible Characteristics
Shelf Life	36 months
Active Solids	100%
UV Cure	225nm to 420nm
Cure Speed	1.5 - 3 secs per layer with 405nm


## TECHNICAL

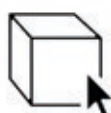
Storage	Dark, cool & dry place.
Wash Up	RESINAWAY® or IPA
Compatible MSLA 3D Printers	 <a href="https://monocure3d.com.au/printers">monocure3d.com.au/printers</a>
	Anycubic Phrozen Creality Elegoo Epax Peopoly Prusa Uniz Wanhao SparkMaker Kelant Not Listed – Contact Us

## DLP LIQUID PROPERTIES

SKUs	DPS-3985AL, DPS-3983OW
Colour(s)	Almond and Ortho White
Viscosity	300cps @ 25°C (BrookfieldRVT)
Odour	Negligible Characteristics
Shelf Life	36 months
Active Solids	100%
UV Cure	225nm to 420nm
Cure Speed	1.5 - 3 secs per layer with 405nm

## DATASHEET

Storage	Dark, cool & dry place.
Wash Up	RESINAWAY® or IPA
Compatible DLP 3D Printers	 <a href="https://printers/asiga-max-uv-dental">printers/asiga-max-uv-dental</a>
	Asiga (Scan QR Code for .ini configuration files) SprintRay Peopoly MoonRay Phrozen Make B9 Creator Flashforge Hunter XYZ Nobel Kudo Titan Not Listed – Contact Us



### FIND YOUR PRINTER SETTINGS

Access the slicer settings for dialing in with our all-resin systems by selecting your 3D printer(s) from the list available on our website, where you can also find information on printer specifications, reviews, and videos; if your printer is not listed, please do not hesitate to contact us.



### PRINTER NOT LISTED?

Feeling frustrated with calibration? Download our Calibration Model to fine-tune your printer and get the best results. Need further assistance? Our local resin 3D printing experts are just an email away at [support@monocure3d.com.au](mailto:support@monocure3d.com.au) if you need one-on-one support.



### DISCLAIMER

Please note that while our settings serve as a useful guide, not all 3D printers are created equal. Due to variations in make and model, your 3D printer may require different layer durations to achieve the desired results. Call us on +612 (0) 9738 5340



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## WORKFLOW PROCEDURES

Most 3D Printers & Resin materials are unique and require setting up before first-time use.

We recommend that you dial-in new printers and resins using one of our handy calibration models that can be found at <https://monocure3d.com.au/product-category/3d-models/calibration-models/>

## PRINTER SETTINGS

The following example settings have been formulated with consideration for monochrome MSLA 3D printers employing a 405nm light source. For more information pertaining to all our materials and most popular 3D printer models, please refer to the official settings page at: <https://monocure3d.com.au/printers/>

**Shake resin bottle well before each use**

**Temperature: 18°C to 35°C**

**Layer Thickness: 50µm**

**Base layer Duration: 15-30(sec)**

**No. Base Layers: 2-4**

**Normal Layer Exposure: 2-3(sec)**

## TECHNICAL DATASHEET

## CLEANING

For optimal post-printing results, use ResinAway® to remove uncured resin. With enhanced cleaning, non-flammable properties, and a pleasant scent, follow the guidelines for the best finish on 3D dental models.

**STEP 1.** Ultrasonic cleaner with ResinAway®: 3-5mins

**STEP 2.** Dry models: Compressed air 20secs \*

\*Warning: Excess IPA or ResinAway® on models might result in surface cracking.



## POST-CURING

**PRECISE™ resin requires post-curing to reach its optimal mechanical properties.**

**STEP 3.** UV Light Source: 405nm LED Ultraviolet light.

**STEP 4.** Minimum Post-Curing Duration (m): 5mins

**STEP 5.** Remove the excess ResinAway® by washing with fresh water.

**STEP 6.** Place the model in the curing chamber for a minimum of 30 minutes to enhance the materials tensile strength, crucial for pressure forming applications.

## STORAGE

To ensure optimal performance and shelf life of Monocure 3D resins, store them in a cool, dark environment, tightly sealed in their original containers, away from heat, direct sunlight, and moisture, while also taking care to prevent the resins from freezing.



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## Technical Data Sheet Disclaimer

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