



RODIN

3D Resin

Rodin Model Resin

Instructions For Use Guide

1. Material Description

Rodin Model resin is a filled resin for use in fabricating high accuracy, thermal stable full and quadrant maxillary and mandibular working or study models in combination with CAD/CAM systems.

2. Composition

Rodin Model resin is comprised of a Dimethacrylate-based resin, photo initiator, inhibitor, fumed silica, and pigments.

3. Intended User

Rodin Model resin is intended to be used only by trained professional dentists or dental lab technicians. All sales are restricted to dental supply dealers, teaching institutions and government dental facilities. This product is labeled for sales restricted to dentists (or licensed practitioner) unless state and local laws permit otherwise.

4. Intended Use

Rodin Model resin is intended for use in the fabrication of 3D printed full and quadrant maxillary and mandibular arch models for use with high-temperature applications such as vacuum forming corrective oral aligners and sleeping appliances. Rodin Model resin requires a computer-aided design and manufacturing (CAD/CAM) system includes the following components not part of the device: oral casting impression, digital restorative file created from a scanned impression system, stereolithographic additive printer, and curing light equipment. For use in tandem with



validated 3D printers and post-curing devices listed below while following manufacturer's suggested instructions.

5. Design Considerations

5.1 If designing a hollow working and study model, maintain a minimum thickness 3mm to prevent delamination failures. Include drainage holes in design to minimize vacuum forces during printing and allow uncured resin to escape.

5.2 If printing models to fabricate aligners or bite splints, design as a solid model to prevent flexing or distortions during the thermal vacuum forming process.

6. Orientation Considerations

6.1 Orientate both upper and lower model designs flat side down and snap direct to the build plate without supports to improve dimensional accuracy and print time.

6.2 Orientate and support both upper and lower model designs perpendicular to the build plate to increase the number of models printed per job.

7. Mixing

3D printing resins contain chemicals of different weights; therefore, it is essential to thoroughly mix the resin prior to starting a new print job.

7.1 For resin already in the resin vat, use a silicon blade or spatula to gently mix resin if it has been sitting for longer than a 12-hour period.

7.2 Before dispensing the resin from the bottle, use a plastic spatula to stir the bottom of the bottle for 1 minute minutes before dispensing or mix using an automated bottle roller for 10 minutes.

7.3 If the bottle has been in storage for excess of a month, it is recommended to roll the bottle for 1 hour to allow the chemical components to mix thoroughly.



8. Post-processing Instructions

8.1 After completion of the print job, remove the build platform from the 3D printer and carefully remove the model from the build platform.

8.2 Wash printed trays in 99% IPA (isopropyl alcohol) using a vortex or ultrasonic bath for 5 minutes then move semi-clean parts to a secondary vortex or ultrasonic bath with fresh 99% IPA for an additional 5 minutes to complete the cleaning process.

Note - Do not keep printed models submerged in IPA for an extended period of time longer than 4 hours to prevent mechanical properties from degrading. Exposure to IPA exceeding 4 hours should be reprinted to ensure max strength of product.

8.3 Use compressed air to remove excess IPA and/or residual uncured resin.

8.4 Repeat steps 4 and 5 until the restoration is thoroughly clean leaving a shine-free, matte finish.

8.5 Post-cure models in a **validated** light curing device following recommended time and temperature schedules if applicable.

9. Validated 3D Printers

Asiga Pro4K, Max, Pico2 printers

Ackuretta Sol printer.

10. Validated Light Curing Devices

Otoflash – Post cure at 5000 flash cycles (recommended for optimum mechanical properties).

Dreve PCU LED N2 – 30 minutes @ 80% Light intensity

Dreve PCU 90 – 10 minutes **per side**.

Ackuretta Curie – 20min, P12, D10

Form labs Form Cure – 15 minutes @ 60C

Note - No inert or vacuum environment required when post curing these materials.



11. Environment Conditions

11.1 3D photopolymer resins are light-sensitive and can be cured from ambient office lighting to sun light from a window. Do not leave resin bottles open to prevent contaminants and minimize light exposure. Resin that has been poured into a resin tank should be covered if not used.

11.2 Best to store resin between 65F and 85F. Printing temp should be set to 30 degrees Celsius for optimum performance if applicable. If the bottle is stored in colder lab conditions as indicated above, it is recommended to place resin bottle with lid tightly sealed in a warm water bath prior to use.

12. Nightly/Long-term Storage

At the end of the day, it is best to pour unused resin from the printer back into the resin bottle for storage. When pouring resin from your tank or other vessel back into the bottle, always pour through a fine mesh filter. This will trap partially-cured debris and prevent contamination of the rest of your bottle, prolonging the life of your materials. The resin is best stored in its original container to maintain shelf-life.

13. Disposal

Dispose waste in accordance with all federal, state and local regulations. Consult state and local hazardous waste regulations to ensure complete and accurate classification of waste. US EPA guidelines for the classification of hazardous waste are found in 40 CFR part 261.3. Liquid resin should be fully cured before being disposed of.

14. Legal

**Pac-Dent Inc. releases all legal liability if the end user deviates from instructional guidance and/or using invalidated equipment that may alter the function and/or performance of the appliance.