RODIN® 3D Resin

A **Pac-Dent** Brand

DENTURE BASE 3.0

For Hig-Impact, Durable Digital Dentures



Instruction For Use

Pac-Dent® Passion for Excellence

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DENTURE BASE 3.0

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DENTURE BASE 3.0

Material Description

Rodin Denture Base 3.0 is a Biocompatible, Class II resin for use fabricating maxillary and mandibular denture bases in combination with CAD/CAM systems.

Composition

Rodin Denture Base 3.0 resin is comprised of a Methacrylate based resin, photo initiator, inhibitor, fumed silica, and pigments.

Intended Customer

Rodin Denture Base 3.0 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.

Intended Use

Rodin Denture Base 3.0 resin use is specific for fabrication of temporary and long term maxillary and mandibular arch denture bases for use with 3D or injected acrylic crown and bridge material systems. Rodin denture base 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 postcuring devices listed below while following manufacturer's suggested instructions.

Contraindications

5.1 Patients allergic to methacrylate material.

5.2 Flexible denture indications.

Design Consideration

6.1 If a denture base is designed as a split file, design sockets with a minimum thickness of 0.3 mm to prevent possibility of holes from occurring during the printing process. This may alter the intaglio surfaces of the denture base when bonding teeth into the base.

6.2 Set cement gap of tooth sockets to 150Qm for snap-in assembly.

Orientation & Supporting

7.1 Orientate both maxillary and mandibular denture bases with adaptive tissue area side down at a 45-degree angle.

7.2 Place the supports on the parameter of the ridge. Avoid placing supports in the adaptive sensitive areas to prevent high spots that can lead to tissue irritation if not removed.

7.2 The recommended minimum support diameter at the point of contact is 0.3mm.

7.3 The recommended minimum support height is 2mm to prevent damage during part removal.

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.

8.1 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.

8.2 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.

8.3 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.

Post-processing Instructions

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

8.2 Wash printed trays in 99% IPA in 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.

Note - Do not expose bite trays to IPA for longer than 10 minutes in total to prevent material strength loss.

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

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

8.7 Post-cure trays in a validated light curing device following recommended time and temperature schedules if applicable.

Note – Post curing must be performed to be in compliance with FDA regulations.

Cleaning Recommendations: Rodin® Universal Resin Cleaner

1. Remove Excess Resin: Wipe away or blow off excess residual resin from the printed object using compressed air or a paper towel.

2. Run Prewash Cycle 3 Minutes:
   Place the object in an ultrasonic, vortex, or oscillating bath filled with Rodin® Universal Resin Cleaner. Run the prewash cycle for 3 minutes.

3. 3.Scrub Surface (Optional):
   After the prewash, dip a clean brush into a fresh batch of Rodin® Universal Resin Cleaner and thoroughly scrub the entire surface of the object.

4. Run Secondary Wash Cycle 3 Minutes:
   Transfer the object to an ultrasonic, vortex, or oscillating bath filled with fresh Rodin® Universal Resin Cleaner. Run this secondary cycle for 3 minutes.

5. Dry the Object:
   Blow off any remaining wash solution using compressed air until the object is completely dry.

6. Inspect for a Matte Finish: Crucial before post-curing.
   Examine the object closely for any shiny spots.
   - If shiny areas are present: Residual resin remains. Repeat the secondary wash (Step 4) and drying process (Step 5).
   - If the surface is completely matte: The object is clean and ready for characterization or post-curing procedures.

Cleaning Recommendations: Isopropyl Alcohol (IPA)

Recommended Workflow for 99%+ Isopropyl Alcohol

Never submerge printed objects in Isopropyl Alcohol for a combined total of more than 10 minutes. Prolonged exposure to IPA will break down the resin, causing degradation to the mechanical properties and structural integrity of the final printed part.

1. Remove Excess Resin:
   Wipe away or blow off excess residual resin from the printed object using compressed air or a paper towel.

2. Run Prewash Cycle 3-4 Minutes:
   Place the object in an ultrasonic, vortex, or oscillating bath filled with IPA. Run the prewash cycle for 3 to 4 minutes.

3. Scrub Surface (Optional):
   After the prewash, dip a clean brush into fresh IPA and thoroughly scrub the entire surface of the object. Do not leave the part soaking in a bath during this step.

4. Run Secondary Wash Cycle 3-4 Minutes:
   Transfer the object to an ultrasonic, vortex, or oscillating bath filled with fresh IPA. Run this secondary cycle for 3 to 4 minutes.

5. Dry the Object:
   Immediately after removing the part from the secondary wash, blow off all remaining solvent using compressed air until the object is completely dry.

6. Inspect for a Matte Finish: Crucial before post-curing.
   Examine the object closely for any shiny spots.

If shiny areas are present: Residual resin remains. Do not run another full wash cycle. Spot-clean the shiny areas manually with a brush dipped in fresh IPA, then dry immediately with compressed air.

If the surface is completely matte: The object is clean and ready for characterization or post-curing procedures.

Support Removal: Grind away remaining support tips using a dull dental carbide bur or Scotch Bright wheel prior to light curing.

Validated 3d Printers

9.1 Asiga Max (385nm), Asiga Pro4k (385nm), Asiga Pico 2 (385nm)

9.2 Ackuretta Sol

9.3 Phrozen Sonic Mini 4K, Phrozen Sonic 4K 2022, Phrozen Sonic XL 2022

Validated Light Curing Devices

10.1 Chroma Flash– Post cure at 5000 flash cycles (recommended for optimum mechanical properties).

10.2 Dreve PCU LED N2 – 15 minutes @ 80% Light intensity

10.3 Ackuretta Curie – 20min, P12, D10

10.4 Form labs Form Cure – 15 minutes @ 60C

Note – No inert or vacuum environment required when post curing if not using light curable stain or glaze systems that requires inert atmosphere conditions.

Charside Adjustments

11.1 If making chair side adjustments to the denture base, remove undesired material with standard dental carbide burs. Smooth sharp edges and remove burs with dental polishing wheels.

Environment Conditions

12.1 3D photopolymer resins are very light-sensitive, sensitive to ambient office lights and sun light from a window. Do not leave resin bottles open. Resin that has been poured into a resin tank should be covered if not used.

12.2 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.

6) Immediately place relined denture into patient's mouth and instruct patient to close bite to maintain correct occlusion. Have patient continue resting bite for 5 minutes to allow VPS Reline to completely set.

(e.g., staining, glazing, or surface adjustments) at this stage, prior to final curing.
8. Curing: Once the surface is completely free of sheen and all characterization procedures are completed, proceed with the validated light-curing process.

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.

Disposal

Dispose 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 cured before being disposed of. Pour liquid resin into a clear container and set it in direct sunlight. Once it has cured, it can be treated as waste and disposed of in the regular trash.

Legal Disclaimer

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The User’s acceptance of the Product constitutes acceptance of these terms and an agreement to be bound hereby.



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