

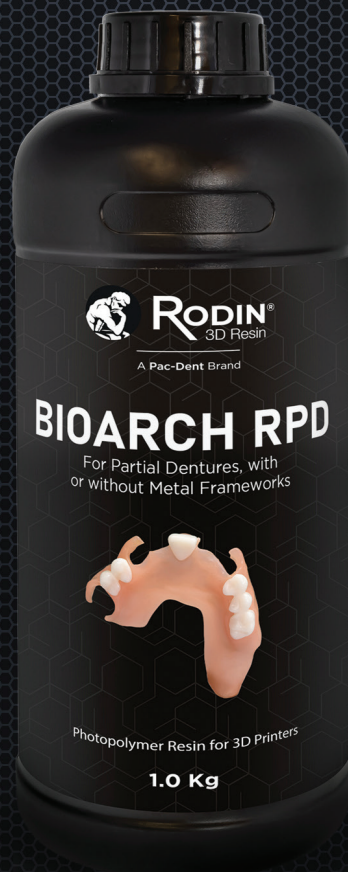


**RODIN**<sup>®</sup>  
3D Resin

A Pac-Dent Brand

# BioArch RPD

For Partial Dentures, with or without Metal Frameworks



Instruction For Use



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## Product Description

**BioArch RPD Resin** is a high-performance, highly filled 3D printing resin designed for the fabrication of precise, dimensionally stable models. It provides excellent surface detail, accuracy, and thermal resistance, making it suitable for demanding applications that require stability during post-processing or thermoforming of external materials over printed models.

The resin is commonly used in dental laboratory and professional production environments to create study models, working models, removable dies, and transfer dies. In addition, the material may be used for general modeling and applications where high accuracy and heat resistance are required.

Printed parts produced using Rodin® BioArch RPD Resin are extraoral, non-medical, and not intended for direct or indirect patient contact.

## Product Variants:

- Rodin® BioArch RPD, Neutral Rose
- Rodin® BioArch RPD, Meharry
- Rodin® BioArch RPD, Clear

All variants share identical printing, washing, curing, and handling instructions.

## Material Composition

Rodin® BioArch RPD Resin is comprised of;

- Monomer
- Oligomer
- Photoinitiator
- Photoinhibitor
- Pigment

## Intended Applications

Rodin® BioArch RPD Resin may be used for the fabrication of:

- Orthodontic models
- Dental working models
- Dental study models
- Removable dies
- Transfer dies
- General-purpose models and prototypes

## Limitations and Use Restrictions

- This product is not a medical device
- Not intended to diagnose, prevent, monitor, treat, or alleviate disease or injury
- No direct or indirect patient contact
- Not for intraoral use
- Not for surgical guides, splints, or intraoral trays
- This product is not intended for use by children

## Safety Information

Always consult the Safety Data Sheet (SDS) for the most complete information regarding hazards, handling, and disposal.

## General Safety Warning

- Rodin® BioArch RPD Resin contains methacrylate-based compounds. Individuals sensitive to methacrylate-based compounds may experience allergic reactions when exposed to uncured resin.
- Avoid direct skin contact with uncured material
- Ingestion: If swallowed, rinse mouth with water. Do not induce vomiting. Seek medical attention if symptoms occur

## Recommended personal protective equipment (PPE)

When handling uncured resin:

- Protective Gloves
- Eye protection
- Protective clothing (Lab coat or apron)
- Closed-toed shoes
- Respiratory protection may be required in poorly ventilated environments or where local regulations mandate its use.

## Design & Printing Preparation

### Design Considerations

Proper model design is essential to achieve dimensional accuracy, structural stability, and reliable performance when printing with Rodin® BioArch RPD Resin. The following design recommendations are provided to support common modeling workflows.

### Hollow Working and Study Models

**Minimum Thickness:** A minimum wall thickness of 3 mm is recommended to ensure structural integrity and to reduce the risk of delamination or deformation

**Drainage Holes:** Drainage holes should be incorporated into hollow designs to:

- Reduce vacuum forces during printing process
- Allow uncured resin escape, enabling effective cleaning and post-curing

**Models for Thermoforming** (e.g., aligner fabrication models or external forming models)

**Solid Model Design:** Solid model designs are recommended for models intended for thermoforming processes

- Helps prevent flexing or distortion during thermal vacuum forming
- Supports dimensional stability during downstream fabrication steps.
- Printed models are used solely as forming tools and are not intended for patient use or contact.

### **Validated Printing Parameters**

#### **Validated 3D Printers**

For the most up-to-date list of validated printers and settings, refer to <https://rodin-3d.com/validated-equipment-settings/>

### **Orientation Considerations**

#### **Flat Side Down Orientation**

**Orientation Strategy:** Position both upper and lower model designs with their flat sides facing down, directly onto the build plate.

##### **Advantages**

- Improved Dimensional Accuracy: This orientation helps maintain the true dimensions of the models, crucial for dental applications.
- Reduced Print Time: Direct contact with the build plate without the need for supports streamlines the printing process, leading to faster completion times.
- In many cases, this orientation allows printing without support structures

#### **Perpendicular Orientation**

**Orientation Strategy:** Align and support both upper and lower model designs in a perpendicular orientation relative to the build plate.

##### **Advantages**

- Increased number of models per print job: This orientation allows for a more efficient use of the build space, enabling the printing of a larger number of models in a single job.

### **Resin Preparation & Mixing**

**Mixing Importance of:** Proper mixing ensures homogeneity of pigments and fillers, which is essential for consistent print quality.

#### **Mixing Resin in the Vat:**

- Gently mix with a silicone blade
- Re-suspend settled pigments
- Strain failed-print resin using a 50-micron mesh strainer

### **Preparing Resin from the Bottle:**

- Stir thoroughly with a plastic spatula
- Alternatively, roll on an automated roller
  - 15 Minutes (regular use)
  - 1 hour if stored for more than one month

### **Printing Environment Conditions**

#### **LIGHT EXPOSURE**

- Avoid UV and strong artificial light
- Store and operate away from direct sunlight
- Cover resin vats when not in use

#### **TEMPRATURE CONTROL**

- Recommended range: 4°C-25°C (40°F-75°F)
- Heated printing environments may be set up to 35°C (95°F)
- Gently warm cold resin while sealed to prevent moisture contamination

### **Post-Processing Instructions**

#### **Step 1: REMOVAL FROM PRINTER**

- Remove build platform carefully
- Use a metal spatula perpendicular to the plate

**Caution:** Keep off-hand clear to prevent injury

#### **Step 2: REMOVING EXCESS RESIN**

- Use low-pressure compressed air to remove uncured resin from the model and build plate

#### **Step 3: CLEANING MODELS**

- Do not exceed 10 minutes total IPA exposure
- Clean details with a soft or medium toothbrush soaked in 99% IPA
- Continue until a matte finish is achieved

### **Validated Light Curing Parameters**

#### **Chroma Flash (Recommended)**

- Total Flash Cycle Budget: **5000 cycles**

#### **Dreve PCU LED N2**

- Duration: **15 minutes**
- Intensity: **80%**

#### **Ackuretta Curie**

- Duration: **20 minutes**
- Settings: **P12, D10, BL ON**

### Formlabs Form Cure

- Duration: **15 minutes**
- Temperature: **60°C**

Validated Equipment List:

<https://rodin-3d.com/validated-equipment-settings/>

**Special Note:** Post-curing with inert gas improves abrasion resistance.

### Storage & Resin Handling

#### RESIN HANDLING AND TRANSFER

- Do not pour used or contaminated resin back into the original bottle
- Store only in original containers
- Avoid oxidation from aluminum build plates.

#### RESIN VAT MANAGEMENT

- Use dedicated vats per resin type/shade
- Ensure vats are IPA-free before refilling

#### BOTTLE SEALING & CLEANLINESS

**Bottle Sealing:** Always keep resin bottles tightly sealed when not in use to prevent contamination and accidental light exposure

**Cleanliness:** Ensure resin tank, vats, and tools used for stirring or handling the resin are clean and free of debris.

#### STORAGE ENVIRONMENT

- Dark, dust-free environment
- Temperature: 4°C–25°C (40°F–75°F)

#### SHELF LIFE

- Follow manufacturer shelf-life guidance
- Inspect periodically and remix as needed

### Disposal & Waste Management

#### DISPOSAL OF LIQUID RESIN

- Never dispose uncured resin
- Fully cure using sunlight or UV lamp before disposal

#### DISPOSAL OF SOLID RESIN

- Ensure fully cured
- Dispose as solid waste per local regulations

## **PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLEANING MATERIAL**

**Gloves and Masks:** Used gloves, masks, and any other PPE contaminated with resin should be disposed of in accordance with hazardous waste regulations.

**Cleaning Materials:** Materials used to clean resin spills or tools, such as paper towels or cloths, should also be cured if saturated with uncured resin before disposal.



For Partial Dentures, with or without Metal Frameworks

BIOARCH RPD

## Legal Information

### Legal Disclaimer

Rodin® BioArch RPD Resin is intended for extraoral, non-medical modeling and prototyping applications only. The product must be used strictly in accordance with the instructions and safety information provided.

Pac-Dent Inc. shall not be responsible for product performance or safety where the resin is used outside its intended applications, used with unvalidated equipment, or handled contrary to the provided instructions and warnings.

The manufacturer's liability, if any, shall be limited to the replacement of the product or the purchase price paid. Nothing in this disclaimer limits or excludes any rights that cannot be limited or excluded under applicable law.

The user remains responsible for compliance with all applicable local safety, environmental, and occupational regulations.

### Manufacturer & EU Responsible Person Information

#### Manufacturer Information

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