Removable Die Model Resin

Scratch resistance

Compatible with LCD/DLP
Material certification: FDA/NMPA
Color: wheat complexion/gray, customizable

Features

- High molding speed
- High edge stability
- High forming precision
- Surface abrasion resistance
- High detail reduction
- MMA/THF-MA free formula

PioNext
Usage

movable Die Model
Resin
PN-RD
Wheat Complexion
Photopolymer UV Resin
1 Liter
Shake Before Use

low skin irritation

low skin hypersensitivity

low shrinkage rate

temperature resistance

strong hardness

cost-effective

surface scratch resistance

short curing time

Hardness	ASTM D2240	/	>D90
Flexural modulus	ASTM D790	MPa	>2000
Flexural strength	ASTM D790	MPa	>60
Elongation at break	ASTM D638	/	>10

Cytotoxicity	ISO 10993-5	Allergenicity	ISO 10993-10
		Irritant	ISO 10993-10

Good liquidity

The resin has good liquidity, can quickly infiltrate the model and solidify.
In this way, it can promote the model printing success rate,
reduce the resin release and adhesion force,
improve the printing accuracy and make it easier to clean.

Scratch resistance

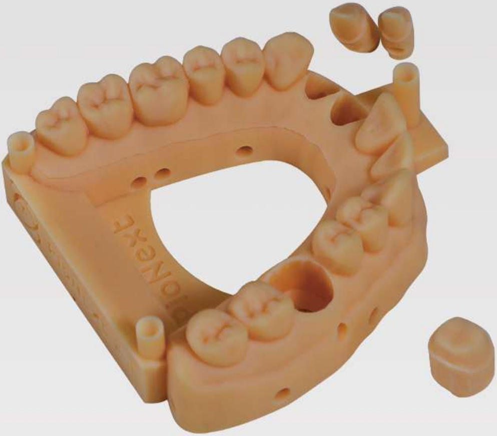
The material has fast forming speed, high forming precision, and surface abrasion resistance.

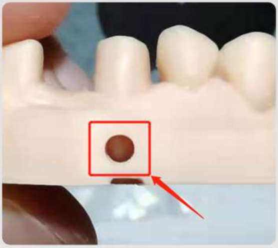
Removable Die Model

3D Printer:PioNext DJ89 PLUS
Model size:193.17×115.11×23.78mm
Printing Time: about 82 min
Initial Exposure: 35s
Exposure Time:3s
Motor Speed:3mm/s

High detail reduction

We professionally test the insertion and extraction of dental molds;
Perform a reverse scan comparison on the standard model.





The application process of Removable Die Model Resin

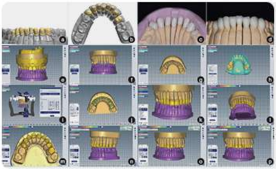
The application of repaired dental model resin in 3D dentistry can provide more precise, fast, and personalized solutions.

Diagnostics and Preparation

The dentist will conduct an oral examination and diagnosis to determine the areas of the teeth that require repair.

Use devices such as intraoral scanners or CT scanners to perform three-dimensional scans of the patient's oral cavity, capturing digital models of the teeth and related tissues.

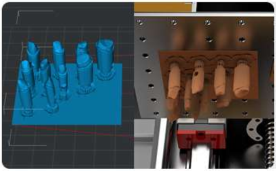
Digital Design



The scanned oral data is imported into computer-aided design (CAD) software. In this software, dental technicians can use digital tools to create designs for the repaired tooth models.

They can adjust factors such as the shape, size, and color of the missing teeth based on the patient's specific situation.

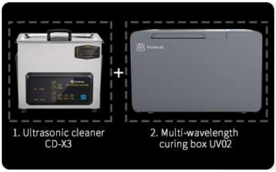
File Export and 3D Printing



After completing the design, the model data is exported in the standard STL file format. STL files are one of the common file formats required for 3D printing.

The preprocessed files are then imported into a resin 3D printer, and the physical model is gradually constructed layer by layer through stacking and photopolymerization. Resin 3D printing technology allows for the printing of tooth models, restorations, or orthodontic devices with precise details and high realism as needed.

Post-processing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1. Ultrasonic cleaner CD-X3
2. Multi-wavelength curing box UV02

After printing, several post-processing steps are required to obtain the final usable product.

This may involve cleaning, removal of support materials, light curing, and other steps.

Ultrasonic cleaner CD-X3
Multi-wavelength curing box UV02

Inspection and Adjustment

The printed physical model is inspected and compared to the design requirements, and appropriate adjustments are made if necessary. This may include removing excess resin and adjusting the shape and size of the tooth model.

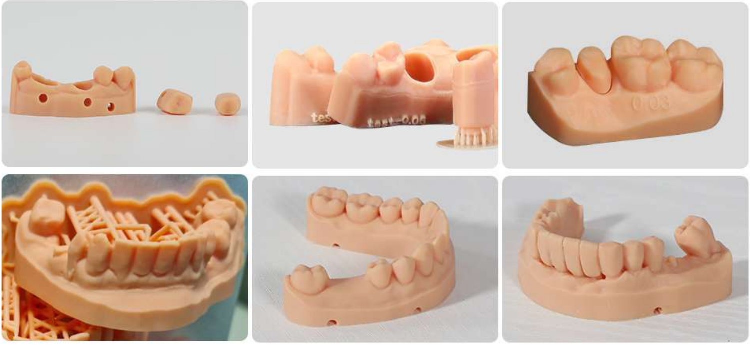
Application and Treatment

The resin-repaired tooth models can be used for various dental applications, such as making dental crowns, bridges, denture bases, etc. Technicians can use resin-repaired tooth models to create tooth components that match the patient's oral morphology.

Parameter suggestion

Application parameters of Removable die model resin

Device name	Thickness	Bottom layer exposure time	Layer exposure time	Motor speed
LCD	0.05-0.1(mm)	30-35(s)	2.9~3.1(s)	3~4(mm/s)
DLP	0.05-0.1(mm)	15-20(s)	1.8~2(s)	3~4(mm/s)



Advantages of digital dental applications

Not only does it improve the patient's experience, but it also enhances the dental practitioner's work efficiency and treatment outcomes.

Traditional production process

subtractive manufacturing technology

Dental Model Fabrication:

Traditionally, dental models were manually created using materials like dental stone, which required a significant amount of time and labor.

Dental Crown and Bridge Fabrication:

Dental crowns and bridges are common methods used to repair damaged or missing teeth. In the past, dentists would customize them using plaster models and send them to dental technicians for fabrication.

Cavity Liner Fillings:

When teeth experience decay or other damage, cavity liner fillings are used for repairs.

Mouthguards and Orthodontic Appliances Fabrication:

Mouthguards and orthodontic appliances are widely used in orthodontic treatments. Traditionally, these devices needed manual adjustments to fit each patient's oral structure.

3D printing process

additive manufacturing technology

Dental Model Fabrication:

dentists can use an oral scanner to capture precise 3D data of a patient's mouth and transfer it to a computer. They can then use a 3D printer to produce accurate dental models. This significantly reduces production time and improves the accuracy of the models.

Dental Crown and Bridge Fabrication:

With the use of 3D printing technology, dentists can directly print precise dental crowns and bridges from digital models. This method saves time and costs while allowing better control over the quality of restorations.

Cavity Liner Fillings:

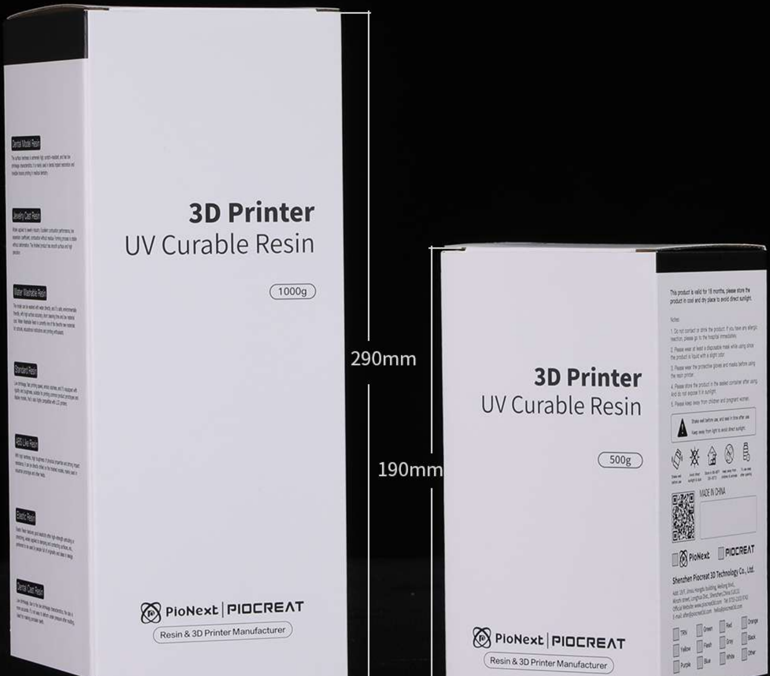
With 3D printing technology, dentists can print custom-fitted fillings that match the shape of the cavities based on accurate models of the patient's mouth. These customized fillings provide better fit and restoration outcomes.

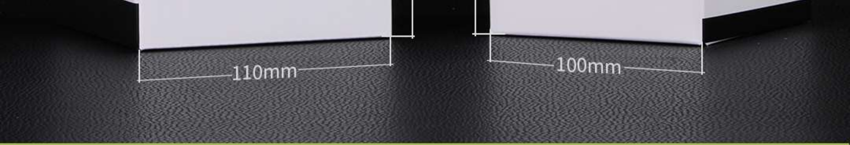
Mouthguards and Orthodontic Appliances Fabrication:
With 3D printing technology, personalized mouthguards, and orthodontic appliances can be printed based on the patient's oral scan data. This improves the effectiveness of orthodontic treatment and enhances patient comfort.

Packaging display

Note: The packaging is for reference only, there may be differences between different batches, and make the object as the standard.

1000g: 290×110×110mm | 500g: 190×100×100mm





Material usage notice

post-processing and washing
Safety precautions
Correct storage method

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post-processing and washing

1. The print model should be cleaned with absolute ethanol/isoprpanol using low-frequency ultrasonic cleaner. Do not use high-frequency to cleaning or scrub the model too hard, in order to avoid to cause certain damage to the surface of the model.

2. Using an air gun or hair dryer to remove the cleaning fluid on the surface of the model.

3. It is recommended to remove the support for model before the post-cure treatment. After then, is recommended to remove rest of the detailed supports and do the surface treatment.

4. Adjust the curing time according to the selected post-curing mode.

Safety precautions

1. This product is for one-time use and cannot be reused.

2. Only use it under good ventilation,please pay attention to air circulation and take protective measures when using.

3. Eye Contact: Immediately flush with plenty of clean water. If you still feel unwell after washing, please seek medical attention immediately.

4. Skin Contact: Remove contaminated clothing and rinse contact area thoroughly with soap and water.

5. 3D resin is not approved for use with food, drink.If swallowed accidentally, do not induce vomiting, keep at rest and seek medical attention in time.

6. Disposal of waste should be in acoordance with local enviromental rugulations

Correct storage method

Please storage the product below to the 25 °C, avoid exposure to the light, general illumination visible light will initiate polymerization reaction.

Do not place it in the sun exposure, humid and corrosive gas presence place.

The shelf life is 18 months.