Surgical Guide Resin

High transparency

Compatible with LCD/DLP
Material certification: FDA/NMPA
Color: transparent

Features

- Easy to drill
- High sharp precision
- High flexural strength
- Transparent to see drill position
- MMA/THF-MA free formula
- Low-yellowing

PioNext
Surgical Guide Resin
PN-SG

Transparent
Photopolymer UV Resin
1 Liter
Shake Before Use

Low shrinkage

bio-compatibility

high transparency

high flexibility

cost-effective

high adaptability

smooth surface

high accuracy

Hardness	ASTM D 2240	/	>D80
Tension strength	ASTM D 638	MPa	>40
Breaking Elongation	ASTM D 638	%	>15
Flexural Strength	ASTM D 790	MPa	>50

Cytotoxicity	ISO 10993-5

Allergenicity	ISO 10993-10
Irritant	ISO 10993-10

Good liquidity

Resin can quickly infiltrate the model and solidify, improving the success rate of model printing, reducing resin release force and adhesion, enhancing printing accuracy, and making it easier to clean the machine and model.

High transparency

Providing a good perspective and operating conditions and greatly contribute to improving the accuracy and safety of surgery.

Surgical Guides Model

3D Printer: PioNext DJ89
Model size:154.68×87.96×19.73mm
Printing Time: about 72 min
Initial Exposure: 50s
Exposure Time: 5s
Motor Speed: 3mm/s

high flexibility

When subjected to external forces, it can undergo plastic deformation without fracturing, allowing it to withstand significant forces and pressure, providing stable support and fixation.

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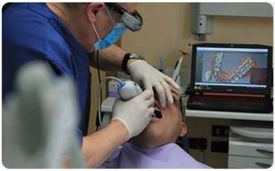
The application process of Surgical Guide Resin

It can be customized according to each patient's unique oral structure, thereby improving the accuracy and success rate of the surgery.

Diagnostics and Preparation



Firstly, the patient's oral cavity needs to be scanned to obtain accurate data on the oral structure. This can be done using devices such as an intraoral scanner or oral CT scanner.

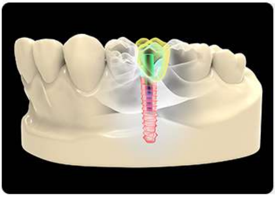
CBCT three-dimensional image data acquisition

In the process of 3D printing in dentistry, CBCT (Cone Beam Computed Tomography) scanning is typically performed to acquire three-dimensional image data of the patient's oral cavity. CBCT scanning provides more detailed information about the oral structures, including the morphology and density of teeth, alveolar bone, and surrounding tissues.

Preoperative dental alignment

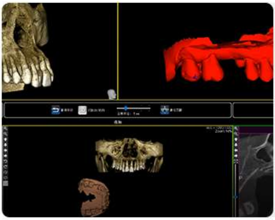
Based on the results of CBCT scanning, preoperative dental alignment can be performed. This refers to determining the position, angle, and depth of the dental implant in the computer software based on the patient's oral condition and treatment needs. Preoperative dental alignment can assist dentists or dental technicians in detailed planning and prediction before surgery.

Selection of dental implants and ideal three-dimensional position design



Based on the results of preoperative dental alignment, suitable dental implants can be selected and an ideal three-dimensional position can be designed. The selection of dental implants typically takes into consideration factors such as the patient's dental condition, quality and quantity of the alveolar bone. The ideal three-dimensional position design of the dental implants ensures stability and functionality.

Implant guide design



Based on the preoperative dental alignment and the ideal three-dimensional position design of the dental implants, the design of an implant guide can be done. An implant guide is a customized guide used to assist in implant surgery, providing precise surgical positioning and guidance. The design of an implant guide typically takes into consideration parameters such as the position, angle, and depth of the dental implants, as well as the morphology of the patient's teeth and alveolar bone.

3D printing

To print the exported STL file, it needs to be imported into a 3D printer and printed using dental surgical guide resin. The specific printing parameters will depend on the specific 3D printer and resin material being used, typically considering factors such as layer height, printing speed, and light intensity.

After printing is completed, post-processing is required for the printed surgical guide. This usually involves removing support structures, cleaning, and curing steps to ensure the quality and usability of the guide.

The fabrication of the surgical guide is complete.

The 3D printed surgical guide will be fitted prior to the surgery. The dentist will place the guide in the patient's mouth to ensure a snug fit against the teeth and oral tissues. The fitting process may involve minor adjustments to ensure the stability and accuracy of the guide.

Implementation of precise minimally invasive implant surgery

During the process of precise minimally invasive implant surgery, it is crucial for the dentist to strictly adhere to the surgical plan and follow the guidance of the surgical guide to ensure accurate implant placement. This approach enhances the success rate of the surgery and reduces the occurrence of post-operative complications.

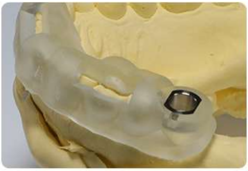
Parameter suggestion

Application parameters of Surgical Guide Resin_PN-SG

Device name	Thickness	Bottom layer exposure time	Layer exposure time	Motor speed
LCD	0.05-0.1(mm)	50-55(s)	5~5.5(s)	3~4(mm/s)
DLP	0.05-0.1(mm)	25-30(s)	3.6~3.8(s)	3~4(mm/s)

Post-processing parameter recommendations table of Surgical Guide Resin_PN-SG

Device name	Wavelength	Percentage of Light Intensity	Recommended time	curing with/ without water
UV02	(365+385)nm	100%	3(2-4)min	No



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 Planting Surgery VS Digital Planting Surgery

1. Accuracy and Predictability:
   - Traditional planting surgery: Relies on the experience and skills of the doctor, with certain limitations in accuracy and predictability.
   - Digital planting surgery: Provides higher accuracy and predictability through precise digital design and fabrication.

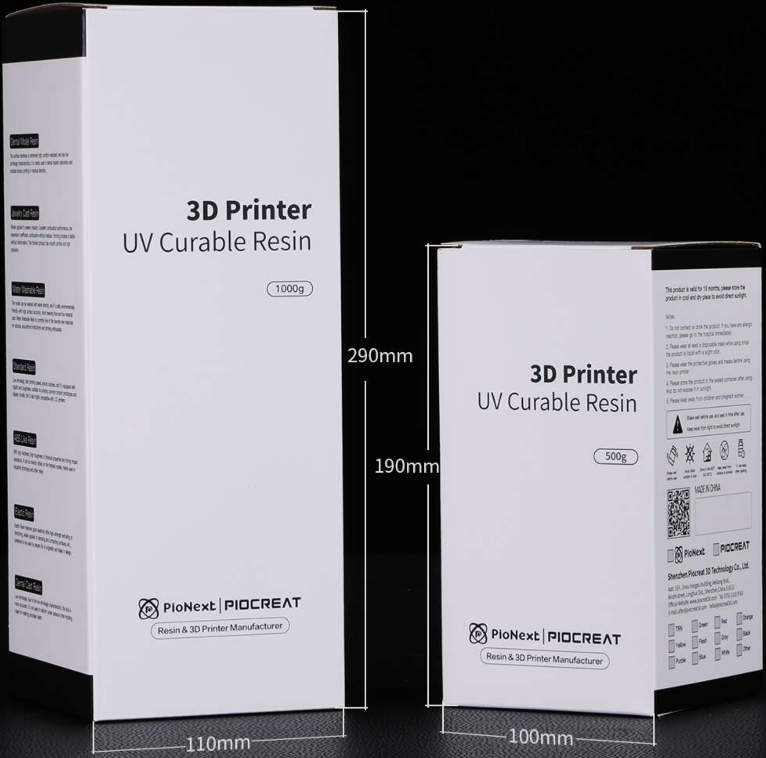
2. Safety and Surgical Risks:
   - Traditional planting surgery: Higher surgical risks, with potential risks of inaccurate positioning of surgical instruments and implants.
   - Digital planting surgery: Reduces surgical risks and complications through precise positioning and fixation using surgical guides.

3. Surgical Time and Efficiency:
   - Traditional planting surgery: Longer surgical time, requiring manual adjustments and adaptations by the doctor.
   - Digital planting surgery: Shorter surgical time, as personalized customization and adaptation of surgical guides can improve surgical efficiency.

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

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.