Shenzhen Zhongchuang 3D Technology Co., Ltd.

Product Usage Guide(Surgical Guide Resin)

Model: PRS-R-11 | Brand: ZonMed PRS | Light-Curing 3D Printing Resin

1. Product Overview

Surgical Guide Resin is a light-curing (385-405 nm) photopolymer resin used for printing dental implant and orthodontic surgical guides. It precisely locates surgical paths and assists dentists in performing complex surgical procedures. Supplied at 1 kg per bottle.

2. Composition

Substance	Conc. (%)	CAS No.
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) bismethacrylate	20.00-45.00	43048-08-4
Diurethane dimethacrylate, mixture of isomers	20.00-35.00	72869-86-4
Poly(ethylene glycol) dimethacrylate	10.00-30.00	25852-47-5
Polyoxyethylene diacrylate	10.00-30.00	26570-48-9
1-Hydroxycyclohexyl phenyl ketone	2.00-5.00	947-19-3

3. Physical & Chemical Properties

Test Item	Standard Value	Test Method
Appearance	Transparent, no impurities	Visual inspection
Viscosity (25 C)	2800-6200 cps	Rotational viscometer
Density (25 C)	1.13-1.18 g/cm3	Density meter
pH Value	6.5-7.4	pH meter
Curing Mode	Light-curing	Operational test
Curing Time	2.5 s	Curing machine

4. Performance Parameters (After Curing)

Parameter	Standard	Unit	Result
Shore Hardness	ASTM D2240	Shore D	82
Bending Strength	ASTM D790	MPa	75-85
Bending Modulus	ASTM D790	MPa	1880-2050
Notch Impact Strength	ASTM D256	MPa	25.5-35.5
Breaking Elongation	ASTM D638	%	6.5-8.5
Water Absorption	ASTM D570	%	0.5-0.85
Hot Deformation Temperature	-	C	< 75

5. Usage Instructions

Preparation - Clean and dry the dental treatment area before use to ensure no moisture or oil contamination.

Print Pre-processing - Thoroughly shake the resin to eliminate air bubbles and pour it into a dental light-curing printer (385-405 nm). Add supports to the model, configure the print parameters, level the build platform, and start printing.

Part Removal & Cleaning - Remove the printed part and ultrasonically clean it in 95% isopropyl alcohol for 2-3 minutes; dry thoroughly with a cool air stream.

Curing - Place the part in a UV curing machine and expose from multiple angles for a total of at least 3-5 minutes. Standard: not sticky when held in hand.

Grinding & Polishing - Remove supports, adjust occlusion and margins, and polish in stages to achieve a natural, tooth-like luster.

Maintenance - Seal the bottle tightly after each use to prevent liquid volatilization and contamination.

6. Handling & Safety Precautions

- Uncured resin may cause an allergic skin reaction (H317) and may cause eye, skin and respiratory irritation (H335). Suspected of damaging fertility or the unborn child (H361). Harmful to aquatic life with long-lasting effects (H412).
- Wear protective gloves, safety goggles with side shields and a laboratory coat; use with adequate ventilation. Do not handle until all safety precautions have been read and understood.
- Avoid contact with eyes, skin and clothing. Avoid breathing dust or fumes. Do not eat, drink or smoke while handling. Wash thoroughly with soap and water after handling.
- Keep containers closed when not in use; contaminated work clothing should not be taken out of the workplace. Store locked up.
- First aid - inhalation: move to fresh air; skin: wash with soap and water; eyes: rinse continuously for at least 15 minutes; if irritation develops or you are exposed or concerned, seek medical attention.
- Dedicated to dental clinical/professional use; forbidden for oral ingestion. If an allergic reaction occurs, stop use immediately and take appropriate medical measures.
- Avoid release to the environment. The resin may polymerize on exposure to sunlight or artificial light.

7. Storage, Shelf Life & Transportation

Parameter	Specification
Storage Temperature	5-25 C, sealed storage
Storage Conditions	Tightly closed container in a cool, well-ventilated location; away from incompatible

	materials, high temperature, light and ignition sources; avoid freezing; do not store in an oxygen-free environment
Shelf Life	24 months (unopened, stored under standard conditions)
Transportation	Avoid extrusion, collision, high temperature and sunlight exposure
Storage Notice	Keep away from fire, heat sources and strong oxidants
Packaging	1 kg per bottle

8. Disposal

- Cure the material before disposal; dispose of in accordance with all local regulations.
- Waste materials after use shall be disposed of in accordance with medical waste management regulations.
- Uncleaned packaging: rinse with isopropyl alcohol (95%); contain and dispose of the rinse material according to local regulations.
- Avoid release to the environment.

9. Disclaimer

All data in this document is based on current test results and industry standards and is for reference only. The purchaser shall judge the applicability of the product independently according to the actual use environment. The manufacturer shall not be liable for any accidental loss caused by improper operation or non-compliant use, and reserves the right to update and modify the data without prior notice.