



ZONMED

Shenzhen Zhongchuang 3D Technology Co., Ltd.

Comprehensive Material Compatibility Guide

Resin, Printer, Staining Agent, and Ceramic Cross-Reference Manual

Material Compatibility Guide

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Scope of Application: Dental 3D Printing Materials and Related Applications

Compiled by: ZONMED

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Table of Contents

I. Instructions for Use

II. Resin and Printer Compatibility

III. Polymer Staining Agent and Surface Treatment Compatibility

IV. Ceramic Material Cross-Reference Guide

V. Common Issues and Troubleshooting

VI. Comprehensive Compatibility Query

VII. Technical Verification Records

VIII. Technical Documentation and Reference Information

IX. Version Update History

X. Professional Q&A

Appendices A–H

Final Query Logic



I. Instructions for Use

1.1 Purpose of This Guide

This guide is used to instruct the selection and combined use of materials related to dental 3D printing, helping technicians quickly determine the compatibility relationships between 'printer—resin—staining agent—ceramic/adhesive,' clarify recommended parameters, post-processing and surface treatment requirements, and reduce printing failures, dimensional anomalies, and rework caused by material mismatches.

Intended Users: Dental laboratory technicians, production and quality management personnel, after-sales and technical support. Main Problems Addressed: Material selection, combination verification, parameter reference, anomaly troubleshooting.

1.2 How to Use This Guide

It is recommended to query in the following order: Select printer → Select resin → View compatibility matrix → View recommended printing parameters → View post-processing requirements → View staining/surface treatment → View ceramic/adhesive combinations.

1.3 Compatibility Level Explanation

Grade	Definition	Usage Recommendations
Best Compatibility	The product has undergone actual measurement verification under specified equipment and process conditions, with stable results and good reproducibility.	Ready to use; follow recommended parameters.
Compatible	Tested and results meet requirements, with acceptable minor fluctuations.	Use recommended parameters and fine-tune if necessary.
Conditionally compatible	Qualified results can only be obtained under specific conditions (layer thickness / temperature / post-processing, etc.).	Strictly follow the specified conditions and add verification.
Not recommended	There is obvious incompatibility (poor curing, poor adhesion, deformation, etc.), and combined use is not recommended.	Avoid use, switch to alternative solutions.
Not verified	No actual measurement data available yet.	Compatibility testing and registration must be completed before use.

1.4 Data Description

Data Sources: Manufacturer TDS/SDS, internal actual measurements and verification records. Test Conditions: Specified equipment, resin batch, layer thickness, exposure parameters, ambient temperature/humidity, and post-processing procedures. Verification Method: Comprehensive assessment based on printing success rate, dimensional deviation, surface quality, adhesion, and long-term stability. Data Update Time: Based on the 'Verification Status/Date' of each record; this manual is updated regularly by version.



Note: The printer parameters, materials, and compatibility data included in this guide have been verified through actual testing; items marked with 【 】 require supplementary completion based on actual conditions.

II. Resin and Printer Compatibility

2.1 Printer Information

The following are the printer brands and models included in the ZONMED parameter database (99 models in total).

Brand	Model	Technology Type	Light Source / Wavelength	Remarks
Ackuretta	Ackuretta SOL	DLP	385 nm	
Ackuretta	Ackuretta SOL SE	DLP	385 nm	
Ackuretta	Ackuretta SOL Plus	DLP	385 nm	
Ackuretta	FreeShape 120	DLP	385 nm	
Ackuretta	DENTIQ	DLP	385 nm	
Ackuretta	Diplo D140	DLP	385 nm	
Anycubic	Photon Mono 4	LCD (MSLA)	405 nm	
Anycubic	Photon Mono 4 Ultr	LCD (MSLA)	405 nm	
Anycubic	Mono M3	LCD (MSLA)	405 nm	
Anycubic	Mono M3 Plus	LCD (MSLA)	405 nm	
Anycubic	Mono M7 Pro	LCD (MSLA)	405 nm	
Anycubic	Mono M7 Max	LCD (MSLA)	405 nm	
Anycubic	Photon P1	LCD (MSLA)	405 nm	
Anycubic	Photon P1 Max	LCD (MSLA)	405 nm	
Anycubic	Photon K3	LCD (MSLA)	405 nm	
Asiga	Max 2	DLP	385 nm	
Asiga	Max UV	DLP	385 nm	
Asiga	Pro 50	DLP	385 nm	
Asiga	Pro 75	DLP	385 nm	
Asiga	Pro 95	DLP	385 nm	
Asiga	PRO 4K65	DLP	385 nm	
Asiga	PRO 4K80	DLP	385 nm	
Asiga	The Ultra	DLP	385 nm	
Creality	Halot One	LCD (MSLA)	405 nm	
Creality	One Pro	LCD (MSLA)	405 nm	
Creality	One Plus	LCD (MSLA)	405 nm	
Creality	Halot X1	LCD (MSLA)	405 nm	
Creality	Halot Ray	LCD (MSLA)	405 nm	
Creality	Halot Sky	LCD (MSLA)	405 nm	
Dekema	trix™print ²	DLP	385 nm	



Dekema	DK-Print 300	DLP	385 nm	
DentaFab	SEGA PRO	LCD (MSLA)	405 nm	
DentaFab	SEGA PRO 4K	LCD (MSLA)	405 nm	
DentaFab	Standard	LCD (MSLA)	405 nm	
DentaFab	Advanced	LCD (MSLA)	405 nm	
Dreve Otoplastik	Phrozen Sonic CS+	LCD (MSLA)	405 nm	
Dreve Otoplastik	Rapid Shape	LCD (MSLA)	405 nm	
Elegoo	Mars 4	LCD (MSLA)	405 nm	
Elegoo	Mars 4 Ultra	LCD (MSLA)	405 nm	
Elegoo	Mars 4 Max	LCD (MSLA)	405 nm	
Elegoo	Mars 5	LCD (MSLA)	405 nm	
Elegoo	Mars 5 Ultra	LCD (MSLA)	405 nm	
Elegoo	Saturn 3	LCD (MSLA)	405 nm	
Elegoo	Saturn 3 Ultra	LCD (MSLA)	405 nm	
Elegoo	Saturn 4	LCD (MSLA)	405 nm	
Elegoo	Saturn 4 Ultra	LCD (MSLA)	405 nm	
Flashforge	Foto 6.0	LCD (MSLA)	405 nm	
Flashforge	Foto 8.9	LCD (MSLA)	405 nm	
Flashforge	Foto 10.1	LCD (MSLA)	405 nm	
Flashforge	Foto 13.3	LCD (MSLA)	405 nm	
Flashforge	Foto 15.6	LCD (MSLA)	405 nm	
Flashforge	Foto Ultra 7.1	LCD (MSLA)	405 nm	
Formlabs	Form 2	SLA Laser	405 nm	
Formlabs	Form 3	SLA Laser	405 nm	
Formlabs	Form 4	SLA Laser	405 nm	
Formlabs	Fuse 1	SLA Laser	405 nm	
Formlabs	Fuse 4	SLA Laser	405 nm	
HeyGears	UltraCraft A2	DLP	385 nm	
HeyGears	UltraCraft Reflex	DLP	385 nm	
HeyGears	UltraCraft DS	DLP	385 nm	
HeyGears	UltraCraft 95	DLP	385 nm	
NextDent	NextDent 5100	DLP	385 nm	
NextDent	NextDent 3100	DLP	385 nm	
NextDent	NextDent C2	DLP	385 nm	
NextDent	NextDent LCD1	DLP	385 nm	
Phrozen	Sonic Mini 4K	LCD (MSLA)	405 nm	
Phrozen	Sonic Mini 8K S	LCD (MSLA)	405 nm	
Phrozen	Sonic 4K	LCD (MSLA)	405 nm	
Phrozen	Sonic 8K	LCD (MSLA)	405 nm	
Phrozen	Sonic Mighty 4K	LCD (MSLA)	405 nm	
Phrozen	Sonic Mega 8K S	LCD (MSLA)	405 nm	



Rapid Shape	D20 II	DLP	385 nm	
Rapid Shape	D40 II	DLP	385 nm	
Rapid Shape	D60 II	DLP	385 nm	
Rapid Shape	D80 II	DLP	385 nm	
Rapid Shape	HS50	DLP	385 nm	
Rayshape	Shape 1+	DLP	385 nm	
Rayshape	Shape 3	DLP	385 nm	
Rayshape	D120 Dental	DLP	385 nm	
Rayshape	D160 Dental	DLP	385 nm	
Rayshape	D200 Dental	DLP	385 nm	
Shining 3D	AccuFab-D1	DLP	385 nm	
Shining 3D	AccuFab-D2	DLP	385 nm	
Shining 3D	AccuFab-D3	DLP	385 nm	
Shining 3D	AccuFab-L4K	DLP	385 nm	
Shining 3D	AccuFab-L4D	DLP	385 nm	
SprintRay	SprintRay Pro 95	DLP	385 nm	
SprintRay	SprintRay Moon	DLP	385 nm	
SprintRay	SprintRay Ultra	DLP	385 nm	
SprintRay	SprintRay (2)	DLP	385 nm	
UniFormation	GKtwo 8K	LCD (MSLA)	405 nm	
UniFormation	GKmax 8K	LCD (MSLA)	405 nm	
UniFormation	GKpro 8K	LCD (MSLA)	405 nm	
UniFormation	GK1 10K	LCD (MSLA)	405 nm	
Uniz	Slash 2	LCD (MSLA)	405 nm	
Uniz	Slash 2 Pro	LCD (MSLA)	405 nm	
Uniz	Slash 3	LCD (MSLA)	405 nm	
Uniz	Slash 4	LCD (MSLA)	405 nm	
Uniz	Slash 3 Pro	LCD (MSLA)	405 nm	

Note: Technology type/light source wavelength are default values categorized by brand; refer to the device manual for specifics.

2.2 Resin Information

The following are the material/resin types included in the parameter database (18 types in total).

Material / Resin Type	Material Type	Application	Recommended Layer Thickness	Remarks
Permanent Crown	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Temporary Crown	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Try-in Crown	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Wash Model	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	



Opposing Model	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Orthodontic Model	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Implant Model	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Orthodontic Bracket	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Surgical Tray	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Surgical Guide	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Full Denture Base	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Temporary Veneer	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Smile Veneer	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Flexible Base	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Aligner	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Night Guard	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Wax Pattern	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	
Gingiva Mask	Dental Photocurable Resin	Dental Restoration / Model	0.05–0.10	

2.3 Resin × Printer Compatibility Cross-Reference (Model → Usable Materials)

The following models all have corresponding printing parameters (complete parameters are available in Appendix H online master list).

Printer Model	Available Materials
Ackuretta SOL	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Ackuretta SOL SE	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Ackuretta SOL Plus	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
FreeShape 120	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、

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	Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
DENTIQ	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Diplo D140	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Photon Mono 4	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Photon Mono 4 Ultr	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mono M3	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mono M3 Plus	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mono M7 Pro	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mono M7 Max	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Photon P1	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask

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Photon P1 Max	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Photon K3	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Max 2	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Max UV	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Pro 50	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Pro 75	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Pro 95	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
PRO 4K65	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
PRO 4K80	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
The Ultra	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、

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	Night Guard、Wax Pattern、Gingiva Mask
Halot One	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
One Pro	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
One Plus	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Halot X1	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Halot Ray	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Halot Sky	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
trix™print ²	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
DK-Print 300	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
SEGA PRO	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
SEGA PRO 4K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical

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	Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Standard	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Advanced	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Phrozen Sonic CS+	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Rapid Shape	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mars 4	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mars 4 Ultra	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mars 4 Max	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mars 5	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Mars 5 Ultra	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Saturn 3	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、

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	Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Saturn 3 Ultra	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Saturn 4	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Saturn 4 Ultra	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Foto 6.0	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Foto 8.9	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Foto 10.1	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Foto 13.3	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Foto 15.6	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Foto Ultra 7.1	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask



Form 2	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Form 3	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Form 4	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Fuse 1	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Fuse 4	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
UltraCraft A2	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
UltraCraft Reflex	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
UltraCraft DS	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
UltraCraft 95	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
NextDent 5100	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、

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	Night Guard、Wax Pattern、Gingiva Mask
NextDent 3100	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
NextDent C2	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
NextDent LCD1	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Sonic Mini 4K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Sonic Mini 8K S	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Sonic 4K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Sonic 8K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Sonic Mighty 4K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Sonic Mega 8K S	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
D20 II	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical



	Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
D40 II	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
D60 II	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
D80 II	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
HS50	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Shape 1+	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
Shape 3	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
D120 Dental	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
D160 Dental	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
D200 Dental	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
AccuFab-D1	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、

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	Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
AccuFab-D2	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
AccuFab-D3	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
AccuFab-L4K	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
AccuFab-L4D	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
SprintRay Pro 95	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
SprintRay Moon	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
SprintRay Ultra	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
SprintRay (2)	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask
GKtwo 8K	Permanent Crown、 Temporary Crown、 Try-in Crown、 Wash Model、 Opposing Model、 Orthodontic Model、 Implant Model、 Orthodontic Bracket、 Surgical Tray、 Surgical Guide、 Full Denture Base、 Temporary Veneer、 Smile Veneer、 Flexible Base、 Aligner、 Night Guard、 Wax Pattern、 Gingiva Mask

GKmax 8K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
GKpro 8K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
GK1 10K	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Slash 2	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Slash 2 Pro	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Slash 3	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Slash 4	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask
Slash 3 Pro	Permanent Crown、Temporary Crown、Try-in Crown、Wash Model、Opposing Model、Orthodontic Model、Implant Model、Orthodontic Bracket、Surgical Tray、Surgical Guide、Full Denture Base、Temporary Veneer、Smile Veneer、Flexible Base、Aligner、Night Guard、Wax Pattern、Gingiva Mask

2.4 Detailed Printer Compatibility

Printer Model: Ackuretta SOL (Example, replaceable)

Brand: Ackuretta Model: SOL Technology Type: DLP Light Source: DLP / LED Wavelength: 385 nm

Compatible Resins

Resin Model	Compatibility Level	Recommended	Verification Status	Remarks
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		Parameters		
Permanent Crown	Compatible	Layer Thickness 0.05 / Bottom Layers 4 / Normal Exposure 2.6 s	Verified	
Temporary Crown	Compatible	Layer Thickness 0.05 / Bottom Layers 4 / Normal Exposure 2.6 s	Verified	
Gingiva Mask	Conditionally compatible	Layer Thickness 0.05 / Bottom Layers 5 / Normal Exposure 2.0 s	Verified	

Technical Notes

Before use, ensure the build platform is level, the release film is intact, and the resin is fully warmed and filtered. It is recommended to first print a small test piece with the recommended layer thickness and exposure to verify dimensions and adhesion; re-test when switching resin batches.

2.5 Detailed Resin Compatibility

Resin Model: Permanent Crown (Permanent Crown Resin, example)

Material Type: Dental Photocurable Resin Primary Application: Posterior Full Crown / Bridge

Recommended Layer Thickness: 0.05 mm Compatible Light Source / Wavelength: 385–405 nm

Validated Printers

Brand	Model	Compatibility Level	Parameters	Verification Status
Ackuretta	Ackuretta SOL	Compatible	Layer Thickness 0.05 / 405 nm	Verified
Anycubic	Photon Mono 4	Conditionally compatible	Layer Thickness 0.05 / 405 nm	Verified
Elegoo	Mars 5	Conditionally compatible	Layer Thickness 0.05 / 405 nm	Verified

Technical Notes

Light sources and exposure intensities vary across devices; when using the same resin on different devices, re-validate bottom exposure and regular exposure parameters. Store resin away from light in a sealed container; stir thoroughly and warm before use.

III. Polymer Staining Agent and Surface Treatment Compatibility

3.1 Polymer Stain Information

Stain Model	Type	Applicable Materials	Main Purpose	Remarks
PRS-S-R01-R21	Universal Staining	Resin / PMMA	Crown and bridge staining, adjusting hue	Thin coat multiple layers, cure layer by layer
PRS-S-R01-R21	Transparent color series	Resin / PMMA	Transparent / Translucent effect, brightening	Pre-glazing coloring
PRS-S-R01-R21	Opaque / Dark shades	Resin / PMMA	Opaque, personalized dark tones	Thin layers, multiple coats



Stain Color Codes (OLYFIX STAIN · PRS-S-R01-R21 Series, 21 colors total)

Color number	Color	Color number	Color	Color number	Color
R01	Bright Red	R08	Orange	R15	Black
R02	Dark Red	R09	Yellow	R16	Grey
R03	Pink	R10	Green	R17	Beige
R04	Light Pink	R11	Dark Green	R18	White
R05	Sepia	R12	Dark Blue	R19	Diluent
R06	Bronze	R13	Light Blue	R20	Glaze
R07	Khaki	R14	Lilac	R21	Glaze (Soft)

3.2 Material × Polymer Stain Compatibility Matrix

Substrate	Stain A	Stain B	Stain C	Remarks
Resin	Best Compatibility	Compatible	Compatible	Polymer photopolymerizable resin substrate
PMMA	Compatible	Compatible	Conditionally compatible	Clean and degrease before coloring
Traditional polymer	Compatible	Compatible	Conditionally compatible	Clean thoroughly before coloring

3.3 Surface Preparation Requirements

Material: Polymer (Resin / PMMA)

- Surface Condition: Clean, dry, free of moisture and dust
- Cleaning Method: Steam cleaning or light sanding
- Drying Method: Air drying or heat drying
- Sanding Requirement: No sanding required
- Primer / Adhesion Promoter Requirement: No primer or adhesion promoter treatment required
- Staining Method: Apply evenly with a brush in thin coats, layer by layer, curing each layer
- Curing Method: Cure under 385–405 nm wavelength light for 30 s

Precautions

Ensure the product is dry and the surface is clean before staining to avoid grayish or hazy appearance. Maintain a clean working environment and equip with a 3D printing curing oven. Cure after each coat application; multiple thin layers are required to achieve the desired effect.

3.4 Stain Effect Evaluation

Evaluation Item	Test Result	Evaluation criteria	Remarks
Color consistency		No noticeable color difference compared to target color card/standard plate by visual inspection; if instruments are used, $\Delta E \leq 2$	



Adhesion		Cross-cut test (1mm×100 grids) + tape peel, Grade 0 detachment qualifies	
Surface Uniformity		Visual or 5× magnifier inspection: no flow marks, spots, or substrate exposure	
Gloss		Visual comparison against standard sample; if gloss meter available, record 60° value	
Abrasion Resistance		Rubber/friction test (500 g load × 20 cycles): no color loss, no significant gloss reduction	
Chemical Resistance		Wipe with 75% alcohol/disinfectant for 30 s: no discoloration, no dissolution or peeling	
Long-term Stability		Re-measure color difference and adhesion after 30 days; changes within allowable range	

IV. Ceramic Material Cross-Reference Guide

4.1 Ceramic Material Classification

Material Name	Type	Primary Application	Processing Method	Remarks
Zirconia (Full Zirconia)	Ceramic	Crowns, Bridges, Frameworks	Milling / Sintering	High Strength, Aesthetics
Glass Ceramic (Lithium Disilicate)	Ceramic	Veneers, Inlays, Single Crowns	Pressing / Milling	Good Translucency
Cast Ceramic (Leucite / Feldspathic)	Ceramic	Custom Single Crowns, Veneers	Casting / Pressing	Dyeable, Glazable
Alumina (Polycrystalline)	Ceramic	Abutments, Frameworks	Milling / Sintering	Good Biocompatibility

4.2 Sintering / Curing Conditions

Material	Temperature	Time	Cooling Condition	Remarks
Zirconia	800 °C	10–20 min (Porcelain Furnace)	Slow furnace cooling to room temperature	Low-temperature Sintering
Glass Ceramic (Lithium Disilicate)	750-760 °C	10–20 min (Porcelain Furnace)	Slow Cooling	Low-temperature Sintering
Cast Ceramic Staining / Glazing	730-760 °C	8–15 min	Natural Cooling	Low-temperature Sintering

4.3 Low-Temperature Glaze Paste / Stain Coloring and Glazing Treatment

Low-temperature glaze paste/stains are materials designed for coloring (staining) and glazing the surface of all-ceramic restorations at low sintering temperatures, enabling personalized color and surface gloss without significantly affecting substrate strength. Common forms include stain liquids (pastes) and glaze materials (powders/pastes). This series is the PRS Ceramix Stain Kit (PRS-S-G series,



21 color codes G01–G21). This section focuses on its application for staining and glazing on zirconia, glass ceramics, and cast ceramics.

Zirconia (3Y-TZP)

After surface sandblasting/cleaning, apply low-temperature glaze paste or dedicated stain liquid via dipping or thin brush coating. After drying, perform low-temperature sintering according to the manufacturer's curve (approx. 800–850 °C / 15 min), then apply glaze to enhance gloss and cool naturally.

Glass Ceramic (Lithium Disilicate)

After surface etching/cleaning, apply thin coats of low-temperature glaze material or stain paste, layer by layer, curing each layer. Low-temperature sinter at approx. 750–760 °C / 15 min, cool slowly; good translucency.

Cast Ceramic (Leucite / Feldspathic)

After surface cleaning, perform surface staining and glazing with low-temperature glaze paste. Low-temperature sinter at approx. 730–760 °C / 5–10 min, cool naturally; used for personalized shade matching and surface gloss restoration.

Applicable Materials and Staining Solutions

Material	Type	Low-temperature Glaze Paste / Glaze Material	Sintering Temperature	Time	Staining Method
Zirconia (3Y-TZP)	Ceramic	Staining Liquid / Low-temperature Glaze Paste	800–850 °C	15 min	Immersion + Thin Brush Coating
Glass Ceramic (Lithium Disilicate)	Ceramic	Low-Temperature Glaze / Staining Paste	750–760 °C	15 min	Thin coat multiple layers, cure layer by layer
Cast Ceramic (Leucite / Feldspathic)	Ceramic	Low-Temperature Glaze Paste	730–760 °C	5–10 min	Surface Staining + Glazing

Operation Process

Material Preparation → Surface Treatment → Staining → Drying → Low-Temperature Sintering / Curing → Glazing Treatment → Final Inspection

Process Description

Material Preparation (Cleaning/Drying) → Surface Treatment (Sanding/Cleaning) → Staining (Thin multi-layer application, curing each layer) → Drying → Low-Temperature Sintering / Curing (According to material curve) → Glazing Treatment → Final Inspection (Color difference, adhesion, gloss). Specific temperature, time, and cooling conditions should follow the material manufacturer's instructions.

Precautions



Glaze paste / glaze material should be thoroughly stirred and protected from contamination; apply thin, multiple layers; strictly control sintering temperature and time to avoid over-firing causing discoloration or glaze running; cooling rate should follow material instructions to prevent cracking.

Low-temperature glaze paste / glaze color codes (PRS Ceramix Stain Kit · PRS-S-G01–G21 series, total 21 colors)

Color number	Color	Color number	Color	Color number	Color
G01	Bright Red	G08	Orange	G15	Black
G02	Dark Red	G09	Yellow	G16	Gray
G03	Pink	G10	Green	G17	Beige
G04	Light Pink	G11	Dark Green	G18	White
G05	Sepia	G12	Dark Blue	G19	Glaze (FP)
G06	Bronze	G13	Light Blue	G20	Glaze
G07	Khaki	G14	Lilac	G21	Mixing Liquid

4.4 Adhesive Compatibility

Substrate	Adhesive	Compatibility	Surface Treatment	Usage Conditions	Remarks
Zirconia (	Resin-Based Adhesive (Contains MDP)	Compatible	Alumina Sandblasting (50 μm) + Cleaning	Pretreatment with MDP-Containing Primer	Zirconia Has No Silica Phase, Silane Ineffective
Glass Ceramic (Lithium Disilicate)	Resin-Based Adhesive	Best Compatibility	5% Hydrofluoric Acid Etching + Silanization	Dual-Cure	Good Translucency
Resin / PMMA	Resin-Based Adhesive	Compatible	Polishing / Cleaning	Light-Curing	Thin Layer Application

Note: Zirconia is a silica-free ceramic, requiring a primer containing 10-MDP + alumina sandblasting for chemical and mechanical bonding; silane coupling agents are ineffective. Glass ceramics (containing silica phase) use hydrofluoric acid etching + silanization. Refer to specific material manufacturer instructions.

V. Common Issues and Troubleshooting

5.1 Print Failure

Common Manifestations

Interlayer delamination, first layer detachment, missing model parts, incomplete formation in certain areas.

Possible Causes

Insufficient bottom exposure / too few bottom layers; improper platform leveling or poor adhesion; release film failure; resin viscosity too high (low temperature); improper exposure or support settings.



Troubleshooting Methods

① Check platform leveling and first layer adhesion; ② Verify bottom exposure and bottom layer count; ③ Inspect release film and resin temperature/viscosity.

Solutions

Re-level and clean the build platform; increase bottom exposure by approximately 10–20% or add more bottom layers; replace damaged/aged release film; warm resin to 25–30 °C and stir/filter thoroughly; review support and orientation settings.

5.2 Dimensional Abnormalities

Common Manifestations

Oversized/undersized, deformation, hole misalignment.

Possible Causes

Over/under exposure, missing shrinkage compensation, over-curing during post-curing, resin batch variation.

Troubleshooting Methods

Compare measured dimensions with digital model; verify exposure and shrinkage compensation; check curing process.

Solutions

Adjust shrinkage compensation factor based on measured deviation; calibrate exposure and layer thickness; reduce post-curing time to avoid over-curing; re-measure dimensions when switching resin batches.

5.3 Surface Abnormalities

Common Manifestations

Rough surface, bubbles, whitening, prominent layer lines.

Possible Causes

Insufficient or excessive cleaning, resin contamination/moisture absorption, improper exposure, aging release film.

Troubleshooting Methods

Check cleaning process and solvent, resin condition and ambient humidity, release film condition.

Solutions

Standardize cleaning (recommend ultrasonic cleaning in IPA for 2–3 min, avoid over-cleaning); replace contaminated resin and store sealed away from light; calibrate exposure; inspect and replace release film.

5.4 Uneven Staining



Common Manifestations

Color variation, spots, uneven adhesion.

Possible Causes

Insufficient surface cleaning/drying, uneven primer application, improper staining time/concentration.

Troubleshooting Methods

Check surface preparation and primer application; verify staining time and concentration.

Solutions

Thoroughly clean and dry the surface; apply thin, multiple layers with curing between layers; control stain concentration and application time, avoid single thick application.

5.5 Glaze Surface Abnormalities

Common Manifestations

Glaze bubbles, cracking, uneven gloss, poor adhesion.

Possible Causes

Improper sintering/curing conditions, surface contamination, uneven glaze layer thickness.

Troubleshooting Methods

Verify sintering curve and cooling conditions; check surface cleanliness and glaze layer uniformity.

Solutions

Adjust sintering/curing temperature and time according to material curve and control heating rate; ensure surface is clean and contamination-free; control glaze layer thickness uniformity.

VI. Comprehensive Compatibility Query

6.1 Quick Reference Table

Printer	Resin	Parameters	Post-Processing	Staining Agent	Surface Treatment	Compatibility
Ackuretta SOL	Permanent Crown	Layer Thickness 0.05 / Bottom Layers 4 / 2.6 s	Cleaning + Secondary Curing	Polymer Stain A	Cleaning + Thin Coating Multi-Layer Curing	Compatible
Photon Mono 4	Gingiva Mask	Layer Thickness 0.05 / Bottom Layers 5 / 2.0 s	Cleaning + Secondary Curing	Polymer Stain B	Cleaning + Thin Coating Multi-Layer Curing	Conditionally compatible



6.2 Application Combination Query

Example: Application Type: Permanent Crown Printer: Ackuretta SOL Resin: Permanent Crown

Application Type: Permanent Crown Printer: Ackuretta SOL Resin: Permanent Crown (Example)

Print Parameters: Layer Thickness 0.05 / Bottom Layers 4 / Normal 2.6 s Post-processing: IPA Cleaning + Post-curing

Stain: Polymer Stain A Surface Treatment: Cleaning + Thin, Multiple Layers Curing

Ceramic/Adhesive: Zirconia + Resin-based Adhesive Final Compatibility: Compatible Remarks: Example

VII. Technical Verification Records

7.1 Test Record

Test Date	Material	Equipment	Parameters	Environment	Test Result
2026.06.01	Permanent Crown	Ackuretta SOL	Layer Thickness 0.05 / Bottom Layers 4 / 2.6 s	23℃ / 45%RH	Dimensional Deviation ≤0.1 mm, Pass
2026.06.01	Gingiva Mask	Photon Mono 4	Layer Thickness 0.05 / Bottom Layers 5 / 2.0 s	23℃ / 45%RH	Dimensional Deviation ≤0.15 mm, Conditional Pass
2026.06.15	Permanent Crown	Ackuretta SOL	Layer Thickness 0.05 / Bottom Layers 4 / 2.6 s	24℃ / 48%RH	Re-Test Stable, Pass

7.2 Test Results

Record the actual measured data for each compatibility test: print success rate, dimensional deviation, surface quality, adhesion, color difference, etc., and annotate the equipment, resin batch, layer thickness, exposure parameters, and ambient temperature and humidity.

7.3 Test Images

Before testing: [Insert image] During testing: [Insert image] After testing: [Insert image]

VIII. Technical Documentation and Reference Information

8.1 Product Technical Documentation

Scope: TDS (Technical Data Sheets), SDS (Safety Data Sheets), and product usage instructions for various resins / colorants / adhesives, archived by material model.

8.2 Equipment Information

Scope of Inclusion: Equipment specifications, light source wavelengths of various printer manufacturers and models, as well as descriptions of cleaning and post-curing equipment.



8.3 Test Data

Scope of Inclusion: Internal compatibility test numbers, test dates, test conditions, and conclusions serve as the basis for determining compatibility levels.

IX. Version Update History

Version	Date	Update Content	Responsible Person
V1.0	2026.06.08	Initial Version	ZONMED

X. Professional Q&A

This chapter compiles professional Q&A materials for ZONMED-related products, serving as a reference for material selection, process settings, and clinical applications. The original materials are in English; a Chinese version can be provided upon request.

CERAMIX STAIN · Ceramic Stain · Ceramic Staining General Q&A (27 Questions in Total)

Q01 What restoration substrates and clinical scenarios is this ceramic staining agent mainly suitable for?

A: The whole series is adapted to mainstream dental ceramic restorations such as zirconia all-ceramic crowns/bridges, porcelain-fused-to-metal restorations, pressed glass ceramics, and CAD/CAM glass ceramics. It can be used for natural tooth color restoration, gingival soft tissue characterization, occlusal surface anatomical detail depiction, anterior aesthetic layered shaping and other scenarios, covering the whole process of technical-side aesthetic staining for fixed restoration and implant-supported restoration. To explore shade options, firing parameters, and application techniques, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for clinical and laboratory support.

Q02 What is the standard sintering temperature of staining agent, and do parameters need adjustment for different substrates?

A: The standard sintering temperature of the whole series color powder is 730–800°C, adapted to the conventional sintering procedures of most zirconia and porcelain restorations. For low-temperature substrates such as glass ceramics, it is recommended to pair with SG19 low-temperature glaze powder and execute according to 730°C low-temperature sintering procedure, to avoid high temperature damaging the crystal phase and mechanical properties of the ceramic substrate. To learn more about sintering temperature curves, glaze pairing guidelines, and material compatibility, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.



Q03 What is the standard blending operation of powder staining agent, and what to blend with?

A: Need to be paired with SG21 transparent blending liquid for blending. Take appropriate amount of color powder on a clean palette, add blending liquid drop by drop, blend into uniform paste with a brush, with consistency of not dripping when lifting brush and smooth brushing. Blending liquid only adjusts consistency and brushing feel, does not change the hue and sintering performance of the color powder itself, and liquid addition amount can be flexibly controlled according to brushing needs. To learn more about powder blending ratios, consistency control, and accessory pairing, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for technical support.

Q04 After brushing staining, brush marks and uneven color easily appear, what is the reason?

A: There are three common reasons: first, uneven color powder blending and too high consistency, leading to insufficient brushing smoothness; second, restoration surface has oil stains and porcelain powder residue, uneven color powder adhesion; third, single application is too thick, local color powder accumulation. Corresponding solutions: fully blend to uniform smoothness, clean and dry restoration surface before staining, adopt thin coating multiple layers method to color layer by layer, apply next layer after each layer is dry, which can effectively avoid brush marks and uneven color blocks. To learn more about staining techniques, troubleshooting brush marks, and surface preparation, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q05 Can different shades be mixed for toning, and what operation principles are there?

A: Supports free mixing of multiple shades, can customize personalized color steps according to patient shade matching results. Operation must follow the principle of "small amount multiple times, same system mixing": first take main color, then add toning shade in small amounts successively, fully blend then test color, avoid adding too much at once; same color family shade mixing has best compatibility, cross-color family correction colors (such as green, purple) need strict dosage control. To learn more about custom shade blending, color matching guides, and stain kit combinations, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q06 After multiple sintering cycles, will color fade or shift?

A: The formula is optimized for high-temperature sintering, using high-temperature stable ceramic colorants. Within standard sintering temperature, after multiple sintering cycles it can still maintain stable hue and saturation, without obvious fading or color shift. But note to avoid ultra-high temperature long-time sintering, exceeding rated temperature range may affect color stability. To learn more about thermal stability, sintering limits, and stain kit durability, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q07 What is the operation order of staining and glazing, and what sequence requirements are there?



A: Follow the standard process of "staining first, then glazing": first complete all layered staining and detail characterization of tooth body and gingiva, after sintering and color fixation, then evenly apply glaze powder for final sintering glazing. Glaze powder will form a dense transparent protective layer on the surface, which can both lock internal color layers and improve wear resistance, and endow the restoration with high-gloss texture of natural enamel. It is forbidden to glaze first then stain, glaze layer will hinder color powder penetration and adhesion, leading to coloring failure. To learn more about the staining and glazing workflow, firing procedures, and enamel glaze options, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q08 If color is too deep after staining and effect does not meet expectations, can it be remedied and adjusted?

A: Before sintering, can directly use a brush dipped in blending liquid to lightly wipe the over-heavy area, dilute and wipe off excess color powder; after sintering, can use fine-grit bur to gently polish surface color layer to lighten color, then touch-up apply adjusted color powder and re-sinter. Small-range deviation can be locally corrected; for large deviation, it is recommended to overall polish surface layer then re-stain, without damaging the main structure of the ceramic substrate. To learn more about color correction methods, polishing tools, and re-sintering guidelines, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q09 Can this staining agent be used with other brands of porcelain powder and glaze powder?

A: It is recommended to use with same brand system to ensure color stability and sintering matching. If cross-brand matching is needed, small sample sintering test must be done first, confirm compatibility of colorant with base porcelain powder and glaze powder, to avoid problems such as blistering after sintering, color variation, and poor bonding; not recommended to mix with resin staining agents and non-ceramic dedicated colorants. To learn more about system compatibility, cross-brand testing guidelines, and material selection, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q10 What are the daily storage requirements for powder staining agent, and what is the shelf life after opening?

A: Need to be sealed and stored in a cool, dry, light-proof room temperature environment, avoid moisture-induced caking and direct sunlight causing colorant degradation. After opening, pay attention to timely sealing and tightening after each use, prevent water vapor and impurities from entering; under standard storage conditions, unopened shelf life is 3 years, after opening it is recommended to use within 12 months. If caking or phase separation is found before use, thoroughly mix until uniform before use. learn more about product storage specifications, shelf life management, and material care, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for technical support..

Q11 Compared with light-curing resin staining agent, what are the core advantages of ceramic staining agent?



A: Core advantages are concentrated in two aspects: durability and simulation degree. Ceramic staining fuses with porcelain layer after high-temperature sintering, color layer is stable and does not fall off, wear resistance, color resistance and aging resistance are far superior to resin staining, can accompany restoration for long-term use; at the same time, the optical properties of ceramic colorants are closer to natural tooth enamel and dentin, after layered staining can achieve highly simulated transparent feeling and layering, with better aesthetic performance, and is the preferred coloring solution for permanent ceramic restorations. To learn more about material properties, long-term stability, and stain kit advantages, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q12 For porcelain surface sandblasting pretreatment before staining, what parameters are most suitable, and what precautions are there?

A: Recommended to use alumina sand powder within 50 μ m, adopt low-pressure sandblasting method to treat porcelain surface, pressure controlled at 0.2–0.3MPa. Excessive pressure and too coarse sand particles will cause excessive porcelain surface roughness, leading to local colorant accumulation and too deep coloring; without sandblasting roughening, porcelain surface is too dense, poor colorant adhesion, easy uneven coloring. After sandblasting, need to clean with alcohol ultrasound and thoroughly blow dry, remove residual sand powder then proceed with staining. To learn more about surface pretreatment parameters, sandblasting guidelines, and stain adhesion optimization, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q13 Are there requirements for brush tools for ceramic staining, and how to more reasonably select for different parts?

A: There are clear requirements. Fine depiction (pits and fissures, cervical margin, developmental lines) prefers fine-head lining brush, with sharp tip and moderate elasticity, can achieve ultra-fine line precise coloring; large-area base color flat coating selects wide flat-head soft brush, more uniform coloring and fewer brush marks. It is recommended to equip dedicated brushes for different color families, correction colors (green, purple, gray) and light color families cannot share one brush, to avoid cross color contamination destroying shade purity of light-colored restorations. To learn more about brush tool selection, fine characterization techniques, and stain kit accessories, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q14 During multi-layerlayering staining, does each layer need to dry after brushing, and can all layers be applied continuously then sintered at once?

A: After each layer brushing, it is recommended to let stand for 30–60 seconds, wait until surface layer is basically dry then apply next layer. Not recommended to continuously thick coat in wet state, otherwise prone to colorant sagging, local accumulation, and uneven color problems. After all coating layers are applied, can be put into furnace for one-time sintering, no need to sinter each layer separately; if pursuing ultimate layering precision, can also thin sinter each layer once, but multiple sintering will slightly deepen chroma, need to reserve concentration margin. To learn more



about multi-layer staining techniques, drying intervals, and sintering management, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q15 After color powder stands still, sedimentation and layering appear at the bottom of the bottle. Is the product deteriorated, and can it still be used?

A: Not deterioration. The inorganic pigment of ceramic color powder has higher density than blending medium. Long-term standing causing sedimentation and layering is a normal physical phenomenon. Before use, fully stir evenly with a clean spatula, or fully blend with blending liquid to uniform state, then can be used normally, does not affect color performance after sintering. If severe caking, moisture-induced hardening, or obvious discoloration occurs, it means it has deteriorated and not recommended to continue using. To learn more about product shelf physical properties, stirring techniques, and material care, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q16 Will sintering heating rate and holding time after staining affect the final color effect?

A: Will produce subtle effects. Within standard sintering temperature range, too fast heating rate and too short holding time may lead to insufficient colorant melting, lighter color development and insufficient gloss; too slow heating and too long holding time, colorant will penetrate deeper into porcelain layer, saturation slightly increases, color slightly deepens. Clinical recommendation is to fix standardized sintering procedure, ensure color consistency of different batch restorations, reduce color difference caused by parameter fluctuation. To learn more about sintering parameters, heating profiles, and color consistency control, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q17 For the same staining agent used on zirconia and glass ceramic substrates, what are the operational differences?

A: Core differences lie in coloring speed and pretreatment requirements: zirconia has denser structure and higher surface hardness, recommended to stain after sandblasting roughening, can appropriately increase color powder concentration to ensure colorant adhesion and color development; glass ceramic structure is relatively loose, colorant penetrates more easily, recommended thin coating and shorten action time, to avoid too deep coloring and dull shade. At the same time, sintering temperature needs to be adjusted corresponding to substrate, zirconia adapted to 800°C, glass ceramic prefers 730–750°C low-temperature sintering. To learn more about substrate-specific staining guidelines, sintering curves, and material optimization, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q18 Can restorations that have been glazed and sintered still be directly touch-up stained and toned on the surface?

A: Cannot directly touch-up stain. After glaze powder sintering, it will form a dense smooth glassy surface layer, colorant cannot penetrate and adhere, direct brushing will only form surface floating color, which will fall off once polished or worn. If shade adjustment is needed, must first use fine-grit



bur to polish and remove surface glaze layer, after cleaning and drying touch-up stain and tone, after confirming color is correct, then re-glaze and sinter to seal. To learn more about post-glaze correction workflows, surface preparation, and re-glazing techniques, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q19 Is biocompatibility guaranteed for ceramic-stained restorations, will it stimulate gingiva?

A: Safety is guaranteed. The whole series uses medical-grade high-temperature resistant ceramic colorants, no heavy metals and irritating components. After high-temperature sintering, colorant and porcelain layer are completely fused and combined, will not precipitate harmful components in oral environment, nor will it stimulate gingiva and oral mucosa. Biocompatibility conforms to relevant safety specifications for dental restoration materials, can be safely worn for a long time. To learn more about biocompatibility certification, material safety, and clinical applications, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for technical support.

Q20 What are the core differences between internal staining and surface external staining in terms of color powder concentration and operation logic?

A: Internal staining is mixing color powder into porcelain powder interior, sintered together with porcelain layer, mainly featuring deep base color and internal layer shaping, with low color powder addition ratio (usually within 5%), to avoid covering the translucency of the porcelain layer itself; external staining is surface brushing coloring after restoration molding, mainly featuring detail depiction and surface toning, color powder concentration can be flexibly adjusted as needed, operation can be corrected with higher fault tolerance. Clinically often adopts the combination of "internal staining base + external staining refinement", balancing depth and precision. To learn more about internal vs. external staining techniques, concentration mixing ratios, and aesthetic workflows, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q21 When staining restoration cervical margin area, how to avoid dark black lines and rigid disconnected color?

A: The core technique is "low concentration, gradient blending": select cervical dedicated shade, dilute with blending liquid to lower concentration, do gradient brushing from cervical margin line toward middle 1/3 of tooth body, the closer to the edge the lighter the concentration, do not paint along cervical margin into regular dark solid line; edge can be paired with beige and light color family color powder for blending transition, eliminate obvious color stepstep, simulate natural cervical chroma deepening effect of natural teeth To learn more about cervical margin staining techniques, gradient blending, and natural shade transition, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q22 After staining and sintering, pits and small bubbles appear on porcelain surface, what are the common causes?

A: There are three common causes: first, bubbles mixed in during color powder blending, bringing bubbles into color layer during brushing, forming pits after sintering; second, restoration surface not



thoroughly cleaned, residual oil stains and porcelain powder debris, poor colorant adhesion forming pits; third, sintering heating rate is too fast, blending medium in color layer has no time to evaporate, breaking through surface layer forming bubbles. Corresponding solutions: slowly blend to exhaust bubbles, fully clean porcelain surface before staining, sinter at standard rate heating.

Q23 Can staining agent be mixed with body porcelain and enamel porcelain powder for internal layer coloring?

A: There are three common causes: first, bubbles mixed in during color powder blending, bringing bubbles into color layer during brushing, forming pits after sintering; second, restoration surface not thoroughly cleaned, residual oil stains and porcelain powder debris, poor colorant adhesion forming pits; third, sintering heating rate is too fast, blending medium in color layer has no time to evaporate, breaking through surface layer forming bubbles. Corresponding solutions: slowly blend to exhaust bubbles, fully clean porcelain surface before staining, sinter at standard rate heating. To learn more about troubleshooting sintering defects, surface cleaning protocols, and stain preparation, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q24 How is the wear resistance of ceramic staining layer, will it be worn off and fade with long-term wear?

A: There are three common causes: first, bubbles mixed in during color powder blending, bringing bubbles into color layer during brushing, forming pits after sintering; second, restoration surface not thoroughly cleaned, residual oil stains and porcelain powder debris, poor colorant adhesion forming pits; third, sintering heating rate is too fast, blending medium in color layer has no time to evaporate, breaking through surface layer forming bubbles. Corresponding solutions: slowly blend to exhaust bubbles, fully clean porcelain surface before staining, sinter at standard rate heating. To learn more about troubleshooting sintering defects, surface cleaning protocols, and stain preparation, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q25 What are the core differences in staining thinking between anterior aesthetic restoration and posterior functional restoration?

A: Anterior aesthetic restoration mainly features layering and transparent feeling, adopts multi-color layered staining, focusing on depicting cervical deepening, incisal semi-transparent halo, developmental texture, calcification spots and other details, pursuing highly simulated natural tooth texture; posterior functional restoration mainly features anatomical three-dimensional sense, focusing on using dark tone shades to depict pit and fissure and developmental groove shadow depth, strengthening occlusal surface morphological recognition, no need for too much semi-transparent modification, balancing efficiency and natural functional tooth appearance. To learn more about anterior aesthetic techniques, posterior occlusal staining, and characterization workflows, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.



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Q26 When mixing multiple shades for toning, how to avoid color getting dirtier, grayer and duller with more mixing?

A: Follow two core principles: first, control the number of mixed colors, same color family shade mixing is safest, try not to exceed 3 shades; second, complementary color correction strictly trace amount addition, such as green correcting red tone, purple correcting yellow tone, add extremely small amount each time, fully blend then compare shade, rather light than dark. Never add multiple complementary colors at the same time and large amount warm-cold complementary neutralization, otherwise will quickly occur gray, dirty, dull waste color. To learn more about color mixing rules, complementary shade correction, and aesthetic toning protocols, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.

Q27 Will unclean sintering furnace chamber affect the final effect of stained restorations?

A: Will produce obvious effects. Residual porcelain powder and different colorant impurities in the furnace chamber will volatilize at high temperature and attach to restoration surface, causing color contamination, surface pits, decreased gloss and other problems, even local different color spots. It is recommended to regularly clean the furnace chamber, and stained restorations should be sintered separately as much as possible, avoid co-firing with porcelain restorations with large color difference, prevent cross color contamination, ensure color purity. To learn more about furnace chamber maintenance, sintering cross-contamination prevention, and shade purity control, visit our PRS-S | Ceramix Stain Kit page or Contact Our Technical Team for laboratory support.



POLYFIX STAIN · Resin Stain · General Questions on Stains (28 Questions in Total)

Q01 What is the core purpose of this resin staining agent, and what usage scenarios is it mainly suitable for?

A: Core Purpose: Specially formulated for aesthetic surface characterization, shade fine-tuning, and protective glazing across a broad spectrum of dental polymer materials. It elevates aesthetic vitality, achieving natural translucency, gradient transitions, and seamless shade matching. Main Application Scenarios: Broad Material Compatibility: Perfect for 3D printed resins, CAD/CAM dental polymers, PMMA blocks/milled restorations, and high-performance PEEK structures. Restoration Types: Ideal for permanent crowns & bridges, temporary restorations, smile veneers, and denture resin bases/frameworks. Dental Laboratories: Enables technician-level shade matching, mamelon characterization, and natural tooth gradient restoration. Chairside Clinical Use: Allows clinicians to perform rapid color optimization and shade adjustments right before final seating. High-Aesthetics Cases: Essential for highly demanding cases, including anterior aesthetic restorations and personalized gingival (gum) shade characterization. To explore our complete color palette, glaze options, and application instructions, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical protocols.

Q02 How is its compatibility with 3D printing light-curing resin? Will it damage the performance of the restoration itself?

A: Compatibility is excellent across 3D printing light-curing resins, CAD/CAM polymers, PMMA, and PEEK—it will not compromise the performance of the restoration. Broad Polymer Compatibility: Formulated specifically for dental organic polymers (3D resins, PMMA milled blocks, CAD/CAM polymers, and high-performance PEEK structures), it seamlessly cross-links with the substrate surface upon curing. Surface-Layer Action: The stain and glaze act exclusively on the micro-surface layer for characterization and protective sealing. It will not corrode the matrix, induce swelling, or cause micro-cracking. Preserves Mechanical Strength: Under standard application protocols, it does not alter the bulk structure of the restoration, ensuring that flexural strength, wear resistance, and long-term clinical durability remain fully intact. To explore our complete range of characterization products and light-curing parameters, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for application guidance

Q03 What is the correct way to use staining agent? Can color concentration and depth be flexibly controlled?

A: Yes, color concentration, shade depth, and saturation can be flexibly adjusted using our dedicated diluent. Flexible Shade Control: High Saturation / Deep Tones: Apply the stock paste directly for localized accentuation. Translucent / Subtle Tones: Blend the paste with our dedicated diluent in custom proportions to reduce opacity, create smooth gradients, and avoid overly heavy or dull shades. Application Techniques: Brushing Method: Use a fine detail brush dipped in the mixed stain for precise characterization, such as cervical warm tones, developmental grooves, and incisal halo translucency. Immersion / Soaking Method: Dip the restoration into the diluted stain solution to



achieve rapid, overall uniform base shade matching. Adjust immersion time to control final shade intensity. To learn more about our complete color options, diluent mixing ratios, and light-curing SOPs, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for application protocols.

Q04 Will stained restorations lose color? Will discoloration or uneven coloring occur during daily wear?

A: No, properly stained and glazed restorations will not fade, discolor, or show uneven color patches during daily wear. Deep Surface Integration: The staining system penetrates into the micro-surface layer of the resin substrate to form a highly integrated color bond, rather than just a superficial floating layer. Protection via Glazing: When sealed with our clear protective glaze and post-cured according to standard protocols, the color layer becomes highly resistant to daily mechanical abrasion, brushing, and intraoral food staining. Seamless Shade Transitions: Offers exceptional color dispersion without blotchiness or unnatural shade steps, maintaining color stability and aesthetics throughout the service life of the restoration. To learn more about our color stability testing, glaze application protocols, and characterization techniques, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical guidance.

Q05 Can different shades be mixed for toning? Can gradient effects close to natural teeth be achieved?

A: Yes, multi-shade mixing is fully supported for custom shade matching. According to the shade matching results of the patient's adjacent teeth, different shades of staining agent can be mixed in custom proportions to create exclusive, personalized shade transitions. When combined with application techniques such as layered brushing and incisal feathering, you can perfectly restore the natural gradient—from a warmer cervical margin to a translucent, opalescent incisal edge. This replicates the true texture and natural translucency of natural teeth, delivering aesthetic outcomes far superior to conventional temporary resins. To learn more about our color mixing guide, characterization techniques, and light-curing SOPs, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q06 What are the daily storage requirements for staining agent, and what precautions are there during operation?

A: Storage Requirements: It is recommended to store in a refrigerator for refrigeration, which provides the best preservation effect. Keep tightly sealed in a cool, dry, and light-proof environment, avoiding high temperatures and direct sunlight to prevent color paste precipitation and discoloration. After opening, shake well regularly before use to ensure a uniform pigment concentration. Operational Precautions: Protection: Wear gloves during operation to avoid direct contact with skin and mucous membranes. Surface Prep: Ensure the restoration surface is completely clean, dry, and free of oil residue before application. Rest & Settling: Allow the stained restoration to stand fully before polishing and glazing, which effectively prevents issues such as uneven shading and bleeding.



To learn more about storage guidelines, safety protocols, and application best practices, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q07 What pretreatment requirements are there for the restoration surface before staining? Will it directly affect the coloring effect?

A: yes, surface pretreatment directly affects the coloring effect. Before staining, it is necessary to ensure the restoration surface is clean and dry, free of residual uncured resin, oil, polishing paste, and other impurities. Micro-Roughness Structure: It is recommended to first lightly polish the surface with fine-grit sandpaper to form a micro-rough structure. Cleaning & Drying: Clean with alcohol and thoroughly air dry, which can improve the adhesion and penetration of the staining agent, making the coloring more uniform and firm. Pre-Glazed Restorations: If the restoration has been glazed in advance, the glaze layer must be removed by grinding before staining, otherwise problems such as uneven coloring and easy falling off of floating color are prone to occur. To learn more about surface preparation protocols, polishing guidelines, and characterization tips, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q08 Is additional light curing needed after staining is completed? How long before polishing and glazing can be done?

A: Yes. This is a penetration-type staining agent, and secondary light curing is required after staining is completed, with a curing time of 30–50 seconds. Post-Staining Curing: After staining, cure the restoration for 30–50 seconds to set the color layer. Glazing & Final Curing: Afterward, apply the glaze and perform the final light curing. Workflow Note: Ensure the surface is properly prepared and dry before staining. Following this protocol ensures reliable color bonding, uniform shade transitions, and long-term durability. To learn more about post-staining guidelines, curing time parameters, and glaze application steps, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q09 If the color is too deep or locally uneven after staining, is there a way to remedy and adjust?

A: Yes, remedy correction is fully supported. Overall Color Too Dark: Use fine polishing paste with a soft brush to lightly grind the surface, reducing the surface staining layer to lighten the shade. Locally Uneven Shading: Dip a small amount of matching diluent to gently wipe the abnormal area to lighten color difference, then touch-up apply staining agent of adjusted concentration to cover evenly. Correction Scope: Small-range deviation can be directly locally corrected; if the deviation is large, the surface layer can be overall ground and then re-stained, without damaging the internal structure and mechanical properties of the restoration. To learn more about color adjustment techniques, dilution ratios, and remedy guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q10 Does this staining agent meet oral safety standards? How is the biocompatibility?



A: The product adopts an oral-grade safe coloring formula, containing no heavy metals or irritating harmful components, conforming to relevant safety specifications for dental restoration materials. Restorations after staining, polishing, and glaze sealing can be safely worn in the mouth, and will not irritate gingiva and oral mucosa under normal use, meeting the biocompatibility requirements of clinical oral restoration. To learn more about our material safety certifications, biocompatibility testing, and regulatory compliance, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical support.

Q11 What are the operational differences when staining rigid crown-bridge resin and flexible base resin?

A: The two types of resin have different structural characteristics, and staining operations need to be adjusted accordingly: Rigid Crown-Bridge Resin: Has a dense structure. It is recommended to appropriately extend staining time or use a slightly higher concentration staining solution to ensure full penetration of the colorant. Flexible Base Resin: Has stronger adsorption. It is recommended to use a diluted, low-concentration staining solution for short-time staining to avoid over-deep coloring and dull shades. Polishing Precaution: Excessive polishing is not recommended after flexible resin staining to prevent surface fuzzing and destroying color uniformity. To learn more about material-specific characterization techniques, dilution ratios, and processing guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q12 Besides adjusting color concentration, what other practical uses does the diluent in the kit have?

A: In addition to mixing color paste concentration and controlling shade depth, diluent has several other practical uses: Delay Drying Speed: It can delay the drying speed of the staining agent, reduce brush marks, and improve coloring uniformity during large-area brushing. Tool Cleaning: It can be used to clean tools such as staining brushes and palettes, and dilute residual dried color paste. Local Correction: When encountering local over-heavy staining, it can be directly used with diluent to gently wipe and lighten. It serves as a supporting auxiliary component for the whole process of toning, correction, and cleaning. To learn more about diluent application guidelines, tool cleaning tips, and correction techniques, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q13 Recommended power and time for product curing

A: After one month of testing, power has little effect on the curing effect of the product. Recommended curing time is 20-30 seconds. If the curing machine is too small, the time can be appropriately increased. To learn more about curing protocols, light equipment compatibility, and operational best practices, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q14 Why are there only these four gingival colors? Will new colors be launched?



A: We comprehensively evaluated gingival colors of various age groups. The 4 colors currently launched can cover the gingival colors of the vast majority of people. Based on comprehensive evaluation of factors such as customer demand volume and market acceptance, we will decide whether to develop new colors. If your required quantity reaches a certain level, we can also customize for you. To learn more about our gingival shade options, custom color development, and bulk ordering policies, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q15 Can tooth colors achieve gradient and layering?

A: Yes

Q16 Is the product easy to use? Will unevenness or bubbles occur?

A: Our product has undergone multiple tests and adjustments. The gingival color material is delicate, easy to use, and very easy to apply evenly. You can watch me demonstrate coloring on site. Our product has added a defoaming formula, and can achieve 7-second defoaming after application. To learn more about product handling, anti-bubble performance, and application tutorials, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q17 Can tooth color only be used for temporary crowns?

A: Material Integration Summary PMMA (Polymethyl Methacrylate): Widely used for temporary crowns, bridges, and long-term provisional restorations. Compatible with your resin ecosystem for staining and glazing to achieve natural aesthetics during the provisional phase. PEEK (Polyetheretherketone): A high-performance thermoplastic used for frameworks, implant abutments, and crowns due to its excellent mechanical properties and biocompatibility. Requires specific surface preparation to ensure optimal bonding when using your resin staining and glazing systems. General Polymer Materials: The versatility of your staining and glazing materials allows for customization across a variety of CAD/CAM polymer substrates, ensuring consistent aesthetic results across different clinical scenarios. To learn more about compatibility protocols for PMMA, PEEK, and other polymers, or to discuss technical bonding requirements, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for specific clinical support.

Q18 Will gloss oil peel off when used on printed finished products?

A: It definitely will not when matching our resin, because the product systems are the same. Gloss oil will not experience falling off, cracking, or peeling during use. If it does not match our resin, we cannot guarantee product quality. To learn more about compatibility guidelines, glaze adhesion, and our complete product ecosystem, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical support.

Q19 Does tooth color adopt nano-filler technology? Will single glaze be launched like other brands?



A: Tooth color has a small amount of nano-fillers, and we will launch more tooth colors in the future.

Q20 Why doesn't your gloss oil have specific parameter comparison? Is it because the test parameters are too low?

A: The advantages of gloss oil are non-toxic, high hardness, compatible with all curing furnaces, short curing time, and high efficiency. For confidentiality requirements, specific numerical values are not disclosed. Compared with competing gloss oils, the characteristics are: compatible with any curing furnace; fast curing in 30 seconds; easy to operate, no artistic skills required. To learn more about product features, technical parameters, and application guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical support

Q21 What is the difference between hard and soft gloss oil, and which products are they respectively used for?

A: Two types of gloss oil: one is high hardness and high wear resistance, the other is high elasticity and high brightness. High-Hardness Gloss Oil: Suitable for permanent crown resin, temporary crown resin, veneer resin, and removable base resin. Soft Gloss Oil: Suitable for flexible resin, night guard resin, invisible aligner resin, and smile aligner resin. To learn more about the applications of hard and soft gloss oils, product selections, and glazing protocols, visit our Dental Glaze page or Contact Our Technical Team for clinical support.

Q22 Are there requirements for environmental temperature and humidity for staining operation? Will it affect the final coloring effect?

A: There are clear requirements. It is recommended to operate in a clean environment with a room temperature of 20–28°C and relative humidity of 40%–60%. High Temperature Impact: Too high environmental temperature will accelerate colorant drying, easily leaving brush marks and causing local uneven coloring. High Humidity Impact: Too high humidity will delay colorant penetration and curing, making it prone to surface floating color and decreased adhesion problems. Environmental Precautions: Avoid operating in areas with air vents and direct sunlight to prevent local rapid drying of colorant and shade lightening, ensuring overall coloring is uniform and stable. To learn more about environmental control protocols, staining techniques, and storage conditions, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical support.

Q23 Will there be visually distinguishable color difference between different batches of the same shade staining agent?

A: The whole series adopts a standardized pigment ratio and production quality control system. Batch Consistency: The color difference between different batches of the same shade is controlled within the clinically acceptable micron-level range, with stable batch color consistency. Naked Eye Appearance: Under routine restoration, no obvious color deviation distinguishable to the naked eye will occur. Aesthetic Recommendation: For anterior aesthetic cases with extremely high chroma requirements, it is recommended to use the same batch of staining agent throughout the same



restoration, which can further eliminate batch differences and achieve ultimate color uniformity. To learn more about batch quality control, color stability, and product guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for technical support.

Q24 Should resin restorations be secondary cured before staining, or is the staining effect better when uncured?

A: Staining must be done after completing standard secondary curing. Risks of Uncured Resin: Insufficiently cured resin surfaces have residual unpolymerized monomers and a sticky layer, which will hinder the uniform penetration of the staining agent, making it extremely prone to uneven coloring, poor color layer bonding, and easy falling off in later stages. Benefits of Fully Cured Resin: Fully cured resin has a stable structure. After surface cleaning and roughening followed by staining, the colorant penetration depth is uniform, bonding with the resin surface layer is firmer, and long-term color fading resistance is more excellent. To learn more about secondary curing protocols, surface preparation techniques, and staining guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q25 Before a stained restoration is worn in the mouth, does additional safety treatment need to be done?

A: No additional special treatment is needed. This product adopts an oral-grade safe coloring formula. After staining, polishing, and glaze sealing, the restoration surface has no residual irritating components, and can be safely worn in the mouth after being processed according to the routine restoration cleaning and disinfection process. Important Note: Stained restorations that are not completely dry and not sealed cannot be directly worn in, to avoid surface layer unstable colorant irritating gingiva and oral mucosa. To learn more about secondary curing protocols, surface preparation techniques, and staining guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q26 If wear and color fading occur after the restoration has been worn for a period of time, can chairside rapid color touch-up be done?

A: Yes. First clean and blow dry the restoration surface using ultrasonic equipment, lightly grind the color-faded area with fine-grit sandpaper to remove the surface aging and contamination layer, then use the corresponding shade of staining agent for local touch-up application. Let it stand for the colorant to fully adhere, then complete polishing and glaze sealing. Small-range wear and color fading can be directly chairside rapidly repaired, with no need to remake the restoration; if the wear range is large and the color layer is severely damaged, it is recommended to re-stain after overall grinding to ensure uniform and consistent shade. To learn more about secondary curing protocols, surface preparation techniques, and staining guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q27 What are the considerations for choosing staining brushes? Will inadequate tool cleaning affect the coloring effect?



A: It is recommended to choose dental dedicated staining brushes with fine soft bristles and moderate elasticity. Fine-head brushes are suitable for detail depiction in fine parts such as pits and fissures and cervical margins, and flat-head brushes are suitable for large-area uniform coloring. Brushes must be thoroughly cleaned with matching diluent after use, to avoid color paste drying on the bristles, otherwise dried color particles will be brought out during next use, forming brush marks and local color blocks, seriously affecting coloring uniformity. In addition, different color systems are recommended to use separate dedicated brushes. Correction color (green, purple) brushes cannot be mixed with light color systems, to avoid cross color contamination destroying the shade purity of light-colored To learn more about secondary curing protocols, surface preparation techniques, and staining guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.

Q28 Will staining and glazing increase restoration thickness, affecting seating accuracy and occlusal relationship?

A: Under standard thin coating operation, staining agent only penetrates a few microns into the resin surface layer, and the glaze layer only forms an extremely thin dense protective film. The overall thickness increase is negligible, basically does not affect the seating and occlusal accuracy of the restoration. However, if thick coating and repeated multi-layer overlaying without grinding correction are adopted, the accumulation of color layer and glaze layer will produce trace thickness, which may cause high occlusion and tight seating. For high-precision restorations, it is recommended to reserve extremely thin staining margin. After staining and polishing, first confirm that seating and occlusion are correct, then perform final glaze sealing, which can completely avoid accuracy problems caused by thickness deviation.. To learn more about secondary curing protocols, surface preparation techniques, and staining guidelines, visit our Dental Resin Stain & Glaze Kit page or Contact Our Technical Team for clinical support.



CLASS CERAMIC (CAD) · Glass Ceramic · CAD Glass Ceramic FAQs (35 Questions in Total)

Q01 What is the core material of this CAD Glass Ceramics, and what type of dental restorative ceramic does it belong to?

A: It belongs to lithium silicate-based glass-ceramics. It is a pre-sintered ceramic block specially developed for CAD/CAM digital milling processes, featuring both high translucency and reliable mechanical strength. Supporting chairside immediate restorations and lab-side batch processing, it is currently the mainstream all-ceramic material for anterior aesthetic restorations and minimally invasive inlay/onlay restorations. To learn more about CAD/CAM glass-ceramics, material specifications, and aesthetic restorative solutions, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for inquiries.

Q02 What flexural strength level can it achieve, and can it be used in the posterior region?

A: After crystallization sintering, its biaxial flexural strength reaches > 450 MPa, featuring high strength and toughness. It can stably support single crowns, inlays, and onlays in the anterior and premolar regions. For the posterior region, it is recommended for inlays and onlays that preserve natural tooth walls. If it is a full posterior crown and the patient has heavy occlusal force, high-strength zirconia materials are recommended to ensure a longer service life. To learn more about CAD/CAM glass-ceramics, mechanical properties, and posterior restoration guidelines, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q03 What do the product designations HT/LT/MT/MO-HO represent, and how should they be selected clinically?

A: These represent four levels of translucency classification: HT (High Translucency): Highest light transmittance, best suited for veneers and single crowns on vital abutments or slightly discolored teeth, offering maximum aesthetic lifelikeness. LT (Low Translucency): Moderate translucency with better masking capability than HT, suitable for mildly discolored abutments and non-vital tooth restorations. MT (Medium Translucency): Translucency falls between HT and LT, balancing aesthetics with basic masking ability, adaptable to most routine cases. MO/HO (Medium/High Opacity): Strongest masking capacity, designed for severe tooth discoloration, implant abutments, and other cases requiring full coverage of underlying dark substrate. To learn more about CAD/CAM glass-ceramics, translucency selection guidelines, and shade matching, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q04 What is its chemical corrosion resistance, and will it discolor during long-term intraoral use?

A: The material exhibits excellent chemical stability, with a chemical solubility/corrosion rate of < 100 $\mu\text{g}/\text{cm}^2$. It maintains stable physical and chemical properties in weak acid and saliva intraoral environments, resisting degradation and surface staining. After proper polishing and glazing, the dense and smooth surface prevents dietary pigments from adhering, allowing it to maintain



consistent shade and luster over long-term wear. To learn more about CAD/CAM glass-ceramics, chemical stability, and stain resistance, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q05 What aspects reflect "precise CAD processing", and is marginal accuracy guaranteed?

A: In the pre-sintered state, the hardness of the material is precisely controlled to adapt to mainstream CAD/CAM milling equipment. The milling process resists chipping and bur sticking, providing high restoration accuracy for fine anatomical structures such as cusps, marginal ridges, and restoration margins. Paired with precise sintering shrinkage compensation design, dimensional deviation after crystallization is minimal, ensuring excellent marginal fit and significantly reducing the workload of intraoral clinical adjustments. To learn more about CAD/CAM glass-ceramics, milling precision, and marginal fit performance, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q06 How is the bonding performance of this ceramic, and is it prone to debonding?

A: Lithium silicate ceramics can be etched with hydrofluoric acid to form a micro-rough surface structure. When combined with a silane coupling agent and resin cement, it achieves a stable chemical bond with excellent bonding interface strength, fulfilling the product's feature of "superior bonding performance." Under standardized bonding procedures, restoration retention is highly reliable with minimal risk of debonding under normal use, providing dependable support for minimally invasive veneers and inlay/onlay restorations. To learn more about CAD/CAM glass-ceramics, bonding protocols, and clinical cementation guidelines, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q07 How broad is the full shade coverage range, and can it satisfy routine clinical shade-matching needs?

A: The full product lineup spans four translucency series (HT, LT, MT, and MO-HO), encompassing mainstream shade ranges including A shades, B shades, BL bleach shades, and opaque MO/HO series. Fully covering the VITA Classical shade guide, it matches the natural tooth shades of the vast majority of patients. Routine restorations can directly select the corresponding base shade, while highly demanding aesthetic cases can be combined with ceramic stain kits for further micro-characterization and detailed modification. To learn more about CAD/CAM glass-ceramics, shade options, and ceramic staining solutions, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q08 Does its coefficient of thermal expansion match natural teeth, and will marginal microleakage occur?

A: The material has a coefficient of thermal expansion (CTE) of $(10 \pm 0.5) \times 10^{-6} K^{-1}$, which closely matches that of natural tooth structure and bonding resin. Under intraoral temperature fluctuations, it exhibits minimal expansion and contraction mismatch, effectively preventing marginal gaps, microleakage, and secondary caries, thereby ensuring long-term marginal sealing integrity. To learn



more about CAD/CAM glass-ceramics, thermal expansion properties, and marginal sealing performance, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q09 The glass transition temperature is around 500°C. What is the clinical significance of this parameter?

A: The glass transition temperature (T_g) is the critical threshold at which a material transitions from a rigid solid state to a high-elastic state. A parameter of 500±20°C means that the material properties remain absolutely stable at normal intraoral temperatures. Furthermore, it perfectly aligns with routine clinical staining and glazing firing temperatures. Within the 750-800°C staining and glazing range, the material will not undergo excessive deformation or crystal phase disruption, ensuring structural integrity after aesthetic characterization.

Q10 What does radiopacity > 1.0 mm Al mean, and what is its clinical value?

A: This means that the material's X-ray opacity is equivalent to that of a 1.0 mm thick aluminum plate, allowing clear radiopaque visualization on periapical and panoramic X-rays. Clinically, doctors can use X-ray imaging to inspect marginal fit, check for secondary caries, and evaluate restoration seating accuracy, facilitating post-operative follow-ups and complication screening. It is a vital safety feature for dental restorative materials. To learn more about CAD/CAM glass-ceramics, radiopacity parameters, and post-operative diagnostic safety, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q11 Compared with pressable glass-ceramics, what are the core advantages of the CAD version?

A: The core advantages lie in efficiency and standardization: CAD milling allows digital one-click shaping without tedious procedures such as wax pattern fabrication, investment, and casting. It enables same-day chairside restoration delivery, offering processing efficiency far superior to pressable techniques. Additionally, digital design and manufacturing ensure higher dimensional consistency, making it ideal for batch standardized production. For aesthetic layering and ultra-thin margin shaping, pressable ceramics hold a distinct edge. To learn more about CAD/CAM glass-ceramics, digital milling efficiency, and same-day chairside restoration workflows, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q12 In chairside immediate restoration scenarios, how is the operational efficiency of this material?

A: Highly adaptable for chairside immediate restorations. After acquiring data with an intraoral scanner, CAD design and milling for a single unit restoration can usually be completed within tens of minutes. Paired with a crystallization sintering furnace, the entire workflow—impression taking, design, milling, and placement—can be completed in a single visit. This eliminates the need for a second patient appointment or temporary crown transition, offering an efficient solution for



minimally invasive aesthetic and emergency tooth defect restorations. To learn more about CAD/CAM glass-ceramics, chairside immediate workflows, and fast crystallization efficiency, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q13 Can this CAD glass-ceramic be used to fabricate 3-unit fixed bridges?

A: It is not recommended for routine use in posterior 3-unit fixed bridges. After crystallization, its flexural strength reaches $\geq 450\text{MPa}$, making it better suited for single-unit restorations such as single crowns, inlays, and veneers. For low-stress 3-unit short bridges in the anterior region, it may be used after careful evaluation of occlusal conditions, provided that the connector cross-sectional area is sufficient. For posterior long-span bridges and large-span bridge restorations, high-strength zirconia materials are preferred due to higher mechanical redundancy and long-term reliability. To learn more about CAD/CAM glass-ceramics, clinical indications, and bridge restoration guidelines, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q14 Compared with composite resin inlays / veneers, what are the core advantages of glass-ceramic restorations?

A: The core advantages lie in long-term stability and aesthetic performance: Glass-ceramics offer wear resistance, stain resistance, and anti-aging properties far superior to composite resins. They do not suffer from wear, yellowing, or aging degradation over time, allowing the aesthetic results to be maintained long-term. Additionally, the optical refractive index of ceramics closely matches natural teeth, delivering superior translucency and three-dimensional depth without the plastic texture often associated with resin. While resin restorations excel in minimal invasiveness and direct repairability, glass-ceramics are the superior choice for medium- to long-term aesthetic restorations. To learn more about CAD/CAM glass-ceramics, aesthetic performance, and long-term durability, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q15 What is the standard procedure for crystallization sintering, and are there requirements for the heating rate and holding time?

A: The recommended standard crystallization sintering procedure: Place in the furnace at room temperature, ramp up at a rate of $5\text{--}10^{\circ}\text{C}/\text{min}$ to $820\text{--}850^{\circ}\text{C}$ (slight variations exist depending on the specific block material), hold for $5\text{--}10\text{min}$, and cool naturally. Heating too quickly can easily lead to uneven internal stress and cracking; insufficient holding time results in incomplete crystallization and substandard strength; while excessive holding time may compromise translucency and shade. It is strongly advised to strictly adhere to the official sintering parameters for the corresponding ceramic blocks to guarantee optimal mechanical and optical properties. To learn more about CAD/CAM glass-ceramics, crystallization firing procedures, and furnace parameter guidelines, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q16 Will ceramic blocks exposed to the air for a long time after unsealing absorb moisture and affect performance?



A: Pre-sintered ceramic blocks have a relatively high porosity. Prolonged exposure to high-humidity environments will result in the gradual absorption of airborne moisture, which may cause internal bubbles, surface pitting, or even compromise the crystallization effect after sintering. Therefore, unused blocks should be promptly sealed and stored after unsealing to avoid prolonged exposure to humid air. If a block has been exposed for an extended period, low-temperature drying prior to sintering is recommended to remove moisture and effectively mitigate defect risks. To learn more about CAD/CAM glass-ceramics, storage specifications, and pre-sintering drying protocols, visit our [PRS-C | CAD Glass Ceramics](#) page or [Contact Our Sales Team](#) for technical support.

Q17 Is post-operative tooth sensitivity after restoring vital teeth with this material caused by the material itself?

A: The material itself features excellent biocompatibility and low thermal conductivity, meaning it will not directly irritate the dental pulp. Post-operative sensitivity is usually related to procedure factors such as excessive tooth preparation, thermal or mechanical pulp irritation, etching acid irritation during bonding, or occlusal high spots, representing a transient operation-related reaction. Under standardized tooth preparation, pulp protection protocols, proper bonding techniques, and precise occlusal adjustments, the incidence of post-operative sensitivity in vital teeth is very low, and most cases resolve spontaneously within 1 to 2 weeks. To learn more about CAD/CAM glass-ceramics, biocompatibility, and clinical pulp protection protocols, visit our [PRS-C | CAD Glass Ceramics](#) page or [Contact Our Sales Team](#) for technical support.

Q18 What level of marginal fit accuracy can restorations made from this material achieve?

A: Combined with precise digital milling and stable sintering shrinkage compensation, standardized procedures can control the marginal gap within $50\mu\text{m}$, which is well below the clinically acceptable threshold of $120\mu\text{m}$. Excellent marginal fit minimizes cement exposure and dissolution, reducing the risk of secondary caries and marginal discoloration, while enhancing the long-term lifespan of the restoration—representing one of the core advantages of digital CAD restorations. To learn more about CAD/CAM glass-ceramics, marginal adaptation, and digital milling precision, visit our [PRS-C | CAD Glass Ceramics](#) page or [Contact Our Sales Team](#) for technical support.

Q19 Is this glass-ceramic suitable for restoring cases of severe posterior wear?

A: It depends on the specific clinical case. If sufficient natural tooth structure and wall support remain, restorations in the form of onlays or occlusal veneers can be selected to restore occlusal vertical dimension, as the material strength is sufficient to meet functional demands. However, if the wear is severe, remaining tooth structure is minimal, or the patient exhibits tight occlusion and heavy bite forces, glass-ceramics are not recommended as the primary choice. Full-coverage zirconia crowns are preferred in such scenarios to provide higher strength redundancy and reduce the risk of chipping or fracture. To learn more about CAD/CAM glass-ceramics, clinical indications for posterior restorations, and strength selection guidelines, visit our [PRS-C | CAD Glass Ceramics](#) page or [Contact Our Sales Team](#) for technical support.

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Q20 Will restorations with infiltration coloring show uneven color after adjustment/grinding?

A: Infiltration coloring involves colorants penetrating into the interior of the pre-sintered ceramic body, ensuring uniform overall coloring and consistent shade between the surface and the interior. Routine adjustment and grinding will not cause obvious color stratification, but only slightly lighten the overall shade. This is also the core advantage of infiltration compared to superficial external staining: the uniform base color is maintained after grinding, avoiding the exposure of white uncolored bodies due to worn-off color layers. If the color appears too light after adjustment, surface external staining can be applied for color correction. To learn more about CAD/CAM glass-ceramics, infiltration coloring technology, and clinical adjustment guidelines, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q21 Will material strength and bonding performance decrease after long-term thermal cycling?

A: The material features a thermal expansion coefficient closely matched to that of natural teeth. After thousands of thermal cycles, the mechanical properties of the ceramic body remain stable without significant strength degradation. Under standardized operating procedures, the bonding interface provides reliable marginal sealing. The expansion and contraction effects induced by thermal cycling are minimal, avoiding noticeable reductions in bond strength and marginal microleakage, thereby ensuring long-term operational stability. To learn more about CAD/CAM glass-ceramics, thermal expansion properties, and long-term bonding stability, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q22 Can this material be used to fabricate customized implant abutments?

A: Customized glass-ceramic abutments can be used cautiously in the anterior aesthetic zone to achieve excellent transgingival aesthetic results and avoid the gray shadow often seen with metal abutments. However, it is important to note that the strength of glass-ceramic abutments is lower than that of titanium abutments, making them suitable only for low-stress anterior regions. For posterior regions or cases with high occlusal forces, titanium alloy or zirconia customized abutments are still preferred to ensure mechanical reliability. To learn more about CAD/CAM glass-ceramics, aesthetic implant solutions, and material selection for abutments, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q23 Is this glass-ceramic suitable for anterior aesthetic restorations in adolescent patients?

A: Since adolescent permanent teeth are not yet fully developed and have wide pulp chambers, minimally invasive veneers or onlays are preferentially recommended. The minimally invasive characteristics of this material can maximize the preservation of natural tooth structure and protect pulp vitality, making it a suitable choice. However, it should be noted that adolescent occlusion is not yet fully stable and bite forces can be relatively heavy. Indications must be strictly controlled, routine post-operative follow-ups are required, and the permanent restoration plan should be re-evaluated after adulthood. To learn more about CAD/CAM glass-ceramics, minimally invasive veneer protocols,



and adolescent restorative care, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q24 Is it difficult to remove glass-ceramic restorations in the future if needed, and will it damage the abutment tooth?

A: The hardness of glass-ceramics is lower than that of natural tooth enamel. During removal, specialized crown-splitting burs can be used for segmental grinding and removal. With proper operation, remaining tooth structure can be preserved to the maximum extent without causing excessive damage. Compared to zirconia, glass-ceramics are easier to remove and offer higher grinding efficiency. Violent prying should be avoided during removal to prevent abutment fracture; under standardized operations, the safety of the abutment tooth is well guaranteed. To learn more about CAD/CAM glass-ceramics, clinical removal techniques, and material safety, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q25 If the proximal contact is found to be too tight or too loose during crown insertion, can it be quickly adjusted chairside??

A: If the proximal contact is too tight, it can be adjusted easily chairside using interproximal polishing strips or fine-grit burs for minimal grinding. If the contact is slightly too loose with a minor deviation, it can be adjusted appropriately during resin bonding or modified by adding resin on the surface. If the deviation is significant, remilling and remaking are recommended. Because CAD restorations are digitally and precisely designed, the probability of a major deviation in proximal contacts is very low, and minor deviations can all be quickly adjusted chairside. To learn more about CAD/CAM glass-ceramics, chairside adjustment tips, and digital design precision, visit our PRS-C | CAD Glass Ceramics page or Contact Our Sales Team for technical support.

Q26 Are the crystallization sintering programs the same for porcelain blocks with different translucencies like HT/LT/MT?

A: The core temperature range for basic crystallization sintering of the same series is consistent, and both can be executed according to the standard lithium disilicate (or lithium metasilicate/silicate) crystallization program. The crystalline phase proportions of ceramic blocks with different translucencies vary slightly, and high-precision aesthetic cases can have their holding time fine-tuned based on translucency: HT (high translucency) blocks are recommended to be sintered for the standard duration to ensure translucency; MO/HO (masking/high opacity) blocks can have their holding time appropriately extended to ensure full crystallization and stable masking performance. To learn more about crystallization programs, translucency variations, and sintering guidelines for our ceramic blocks, visit our product page or Contact Our Sales Team for technical support.

Q27 When using this CAD ceramic for inlays/onlays, what are the considerations for tooth preparation and margin design?



A: We recommend using a shoulder or shallow chamfer margin design, with a suggested margin width of $\geq 0.8\text{mm}$. Avoid overly thin, knife-edge margins to prevent chipping during milling and after sintering. Tooth preparation must remove all unsupported enamel, and internal line angles should be rounded. When milling the corresponding restoration, it is recommended to orient the margins upward to ensure marginal precision and integrity, resulting in better marginal fit after final seating. To learn more about CAD ceramic tooth preparation guidelines, margin design standards, and milling optimization for inlays/onlays, visit our product page or Contact Our Sales Team for technical support.

Q28 Can it be immersion-stained in the pre-sintered state and then crystallized? What is the difference in effect compared to external staining?

A: Yes. The pre-sintered ceramic block has a high porosity, allowing the staining liquid to penetrate into the interior of the ceramic body. After crystallization, the color is uniform and translucent, producing an "internal staining" effect with a more three-dimensional color distribution and higher wear resistance, making it suitable for overall base color adjustment. External staining involves surface coloring after crystallization, which is more suitable for fine modifications such as local detail carving, cervical darkening, and incisal gradation. Clinically, a combination of "immersion staining for base building + external staining for fine retouching" is commonly adopted to balance efficiency and aesthetic performance. To learn more about immersion staining in pre-sintered states, internal vs. external staining, and our companion low-temperature Glaze & Stain Kits for surface retouching, visit our product page or Contact Our Sales Team for technical support.

Q29 Are there differences in sintering shrinkage rates among porcelain blocks of the same shade but with different translucencies?

A: The overall shrinkage rate of formulas within the same series has been uniformly calibrated with minimal differences, so routine restorations do not require individual design compensation adjustments. For high-precision cases (such as precision veneers and high-restoration occlusal surfaces), it is recommended to perform small-sample verification for the corresponding translucency to further improve seating accuracy. Ceramic blocks with the same translucency and specifications offer the best consistency in shrinkage, and batch production should prioritize uniform selection. To learn more about sintering shrinkage rates, translucency consistency, and high-precision matching guidelines, visit our product page or Contact Our Sales Team for technical support.

Q30 How is it most reasonable to choose between the HT/LT/MT/MO series for different degrees of abutment tooth discoloration?

A: For mildly discolored abutment teeth (such as mild fluorosis or mildly yellowish vital teeth), prioritize choosing the HT/MT (high/medium translucency) options, utilizing natural translucency to achieve a lifelike effect without requiring extra masking. For moderately discolored abutment teeth (non-vital teeth, moderate tetracycline teeth), choose the LT (low translucency) option, relying on the material's own masking power to neutralize the base color and prevent a grayish look from



showing through. For severely discolored abutment teeth or titanium abutment restorations, directly choose the MO/HO (masking/high opacity) options, which can effectively mask deep base colors while coordinating with surface external staining to adjust the surface color tone, balancing both masking and aesthetics. To learn more about selecting the HT/LT/MT/MO series for different tooth discolorations, masking techniques, and our companion low-temperature Glaze & Stain Kits for surface retouching, visit our product page or Contact Our Sales Team for technical support.

Q31 What is the specific workflow and core points of the combined operation of "immersion staining for base building + external staining for fine retouching"?

A: The standard workflow is: milling complete → clean and dry the ceramic blank → immerse in staining liquid to complete overall base color immersion → dry and then crystallize and sinter → surface grinding and finishing → external staining to carve details such as cervical darkening, incisal gradation, and fossa/fissure textures → low-temperature sintering to fix the color → glaze and final firing. Core points: Immersion staining is only for the basic base color, and the concentration should be lighter rather than deeper to leave room for subsequent adjustments by external staining; external staining is only for local details and does not cover the overall base color. The layered coordination of the two can ensure a three-dimensional, wear-resistant color while achieving refined aesthetic expression. To learn more about the "immersion staining + external staining" workflow, core techniques, and our companion low-temperature Glaze & Stain Kits for surface retouching, visit our product page or Contact Our Sales Team for technical support.

Q32 Do the milling parameters need to be adjusted separately when milling ceramic blocks with different translucencies?

A: Minor adjustments are needed. HT (high translucency) ceramic blocks have a relatively more brittle texture; it is recommended to appropriately lower the milling feed rate and reduce the cutting depth per layer to avoid edge chipping. MO/HO (masking/high opacity) blocks have a higher filler content and slightly greater hardness; the bur speed can be appropriately increased to ensure a smooth milling cross-section and reduce tool marks. LT/MT (low/medium translucency) standard blocks can be stably milled using default parameters. Before mass production, it is recommended to perform single-unit trial milling and fine-tune parameters based on the edge-forming quality, which can significantly improve the yield rate. To learn more about milling parameters, translucency adaptations, and optimization guidelines for our ceramic blocks, visit our product page or Contact Our Sales Team for technical support.

Q33 When making anterior ultra-thin veneers, how should thickness and translucency be matched to balance masking and translucency?

A: The general design logic is: for the cervical region with a thickness of 0.4-0.5mm, choose the LT (low translucency) option to mask the cervical abutment tooth base color; for the incisal edge with a thickness of 0.3-0.4mm, choose the HT (high translucency) option to restore the natural semi-translucent texture of the incisal edge; the middle region should have a gradient transition. If the abutment tooth is overall dark, the LT option can be used throughout, with additional external



staining using transparent colors on the incisal edge to simulate translucency, which ensures overall masking performance while avoiding a dull, plastic-like appearance throughout. To learn more about anterior ultra-thin veneer thickness and translucency matching, masking techniques, and our companion low-temperature Glaze & Stain Kits for surface retouching, visit our product page or Contact Our Sales Team for technical support

Q34 When sintering multiple restorations of different sizes in the same furnace, do the sintering parameters need to be adjusted?

A: For a small batch (3–5 units) of conventional restorations in a single furnace, the standard crystallization program can be used. When performing full-furnace sintering or including large-volume restorations (such as full crowns and high onlays), it is recommended to extend the holding time by 2–3 minutes to ensure thorough internal crystallization and avoid insufficient core crystallization and low strength in large-volume parts. At the same time, restorations should be placed with gaps between them, avoiding mutual contact to ensure uniform heating. It is not recommended to sinter restorations with excessively large volume differences in the same furnace to prevent over-firing of small parts and insufficient crystallization of large parts. To learn more about multi-unit sintering parameters, load adjustments, and optimization guidelines for our ceramic blocks, visit our product page or Contact Our Sales Team for technical support.

Q35 After chairside occlusal adjustment, how can the surface gloss be quickly restored without returning it to the furnace for glazing?

A: It can be quickly processed using a chairside polishing kit: first use a fine-grit diamond bur to smooth out the adjustment marks, and then use rubber polishing wheels and wool brushes with ceramic polishing paste for stepwise polishing. Finally, a high-gloss surface close to glazing can be obtained without the need to return it to the furnace for sintering. This method is only suitable for gloss restoration after small-scale adjustments. For large-scale adjustments or a general decrease in gloss, it is still recommended to re-glaze and sinter to obtain a more durable and uniform surface dense layer and wear resistance. To learn more about chairside polishing sets, gloss restoration techniques, and our companion low-temperature Glaze & Stain Kits for surface retouching, visit our product page or Contact Our Sales Team for technical support.



CLASS CERAMIC (PRESS) · Pressed Ceramic · Frequently Asked Questions about Pressed Ceramic (35 Questions in Total)

Q01 What is the core material of this pressable glass-ceramic, and what processing technique corresponds to it?

A: It is a lithium disilicate-based heat-pressable glass-ceramic formed using the lost-wax heat-pressing technique: a restoration wax pattern is first created, and after investment and burnout, ceramic ingots are high-temperature heat-pressed into the mold cavity to form the final restoration. Once molded, the material features a dense and uniform structure with exceptional optical performance, making it a classic material for high-end anterior aesthetic restorations. To learn more about pressable glass-ceramics, lost-wax heat-pressing techniques, and high-end anterior aesthetic solutions, visit our product page or Contact Our Sales Team for technical support.

Q02 What does "Minimal Reaction Layer" mean, and what practical advantages does it bring?

A: During the heat-pressing process, an extremely thin reaction layer forms on the surface where the ceramic material contacts the investment material. With an optimized formulation, this material achieves an ultra-thin reaction layer, designated as "Minimal Reaction Layer." Its practical advantages include high post-pressing surface smoothness and no need for extensive grinding to remove the reaction layer. This reduces post-processing workload while maximizing the preservation of precise restoration margins and surface optical properties, thereby minimizing the impact of grinding on aesthetic outcomes. To learn more about pressable glass-ceramics, minimal reaction layer characteristics, and lab processing efficiency, visit our product page or Contact Our Sales Team for technical support.

Q03 It focuses on ultra-thin veneer restorations. How thin can it go, and is the strength guaranteed?

A: This material is an ideal choice for ultra-thin veneers. Under standardized processing techniques, the marginal thickness can be as low as under 0.3 mm, enabling minimally invasive tooth preparation and maximizing the preservation of natural tooth tissue. After crystallization, the biaxial flexural strength is > 420 MPa. Paired with reliable resin bonding, it exhibits excellent chipping resistance under normal use and will not become fragile or easily fractured due to its thinness. To learn more about ultra-thin veneers, material strength, and minimally invasive restorative solutions, visit our product page or Contact Our Sales Team for technical support.

Q04 How are the acid and stain resistance of the material? Will it yellow or discolor after long-term wear?

A: The product exhibits excellent acid and stain resistance, with a chemical solubility of $< 100\mu\text{g}/\text{cm}^2$, maintaining stable physical and chemical properties in oral acidic environments and daily dietary pigment environments. The dense ceramic surface is resistant to pigment adsorption. Following standardized polishing and glazing, it is less prone to yellowing, staining, and other issues during long-term wear, maintaining the restoration's aesthetics and surface gloss for a sustained



period. To learn more about pressable glass-ceramics, chemical solubility, and long-term aesthetic stability, visit our product page or Contact Our Sales Team for technical support.

Q05 What clinical scenarios are the LT and HT translucency series respectively suitable for?

A: LT (Low Translucency): Features stronger masking ability with relatively moderate light transmission, making it suitable for mildly discolored abutment teeth, non-vital tooth veneers, or single crown restorations, effectively masking underlying color abnormalities. HT (High Translucency): Features superior translucency and higher aesthetic fidelity, making it suitable for vital abutment teeth and cases with favorable color conditions, achieving natural aesthetic effects highly integrated with natural teeth. To learn more about LT and HT translucency series, shade selection, and aesthetic restoration solutions, visit our product page or Contact Our Sales Team for technical support.

Q06 Is the chipping risk of pressable restorations high, and how is the material's toughness performance?

A: Through optimized formulation, this material possesses reliable strength and toughness, corresponding to the product label "Reliable Strength, No Chipping Risk." Heat-pressed restorations feature a uniform internal structure without machining tool marks, resulting in a more even stress distribution. Compared to milled ceramics, they are less prone to microcrack propagation. Under the premise of proper bonding and reasonable use, the incidence of chipping is low, and long-term use stability is excellent. To learn more about pressable glass-ceramics, reliable strength properties, and long-term clinical stability, visit our product page or Contact Our Sales Team for technical support.

Q07 Can the full range of shades meet the requirements for anterior aesthetic restorations?

A: The shade system covers both LT and HT translucency series, including mainstream clinical shades such as A1-A3.5, B1-B4, and BL1-BL4. It comprehensively covers the basic color gamut of natural teeth, meeting the color-matching needs of the vast majority of patients. For high-end aesthetic cases, it can also be combined with external staining and enamel layering to further enhance personalized aesthetic expression. To learn more about our shade system, LT and HT series, and personalized aesthetic solutions, visit our product page or Contact Our Sales Team for technical support.

Q08 In what aspects is "convenient clinical operation" reflected, and is it easy for dental laboratories to get started?

A: On the one hand, the material features a broad heat-pressing process window, is compatible with mainstream dental pressing equipment, and can be stably formed using standard pressing programs with a high yield rate. On the other hand, the reaction layer is thin, resulting in minimal post-processing grinding workload. The trial-fitting, adjustment, grinding, and bonding procedures are identical to those of conventional all-ceramic restorations. Laboratories and clinical sides can quickly get started without requiring extra equipment replacements or major adjustments to operating habits. To learn more about pressable glass-ceramics, ease of laboratory handling, and



clinical workflow compatibility, visit our product page or Contact Our Sales Team for technical support.

Q09 Besides ultra-thin veneers, what other restorations can this material be used for?

A: Beyond its core application for ultra-thin aesthetic veneers, it can also be used to fabricate inlays, onlays, anterior and premolar single crowns, and post-and-core crowns. It is suitable for various clinical scenarios, including anterior aesthetic reconstruction, tooth defect restoration, and cosmetic restoration of discolored teeth. For posterior full crowns subject to high occlusal forces, we recommend selecting high-strength zirconia materials. To learn more about our pressable glass-ceramic applications, material indications, and restorative solutions, visit our product page or Contact Our Sales Team for technical support.

Q10 Does its thermal expansion coefficient match tooth structure, and how is the marginal sealing?

A: The thermal expansion coefficient of the material is $(10 \pm 0.5) \times 10^{-6} \text{K}^{-1}$, showing good compatibility with the thermal expansion coefficients of natural tooth enamel, dentin, and resin cements. Under oral thermal and cold temperature changes, it will not produce marginal gaps due to expansion and contraction differences, which can effectively reduce the risks of microleakage, secondary caries, and marginal staining, thereby ensuring the long-term service life of the restoration. To learn more about pressable glass-ceramics, thermal expansion properties, and marginal sealing performance, visit our product page or Contact Our Sales Team for technical support.

Q11 Compared to CAD/CAM milled glass-ceramics, what are the core advantages of using pressable ceramics for aesthetic restorations?

A: The core advantages lie in aesthetic depth and the limits of minimally invasive procedures: Heat-pressed restorations have a more uniform internal structure, superior optical translucency, and enhanced three-dimensional layering, achieving a more realistic depth of natural teeth. Meanwhile, pressing allows for thinner marginal shaping, requiring smaller tooth preparation volumes, making it more suitable for ultra-minimally invasive aesthetic veneer cases. The advantage of CAD/CAM milling is high processing efficiency, suitable for chairside immediate restorations. To learn more about the aesthetic advantages of pressable glass-ceramics, minimally invasive veneer techniques, and restorative solution comparisons, visit our product page or Contact Our Sales Team for technical support.

Q12 What are the long-term precautions for patients after crown/restoration insertion?

A: In daily use, avoid biting hard objects with the restoration (such as nutshells, bones, and bottle caps) to prevent chipping caused by excessive local stress. Maintain good oral hygiene by using dental floss and water flossers to clean the cervical margins of the restoration, protecting gingival health and marginal sealing. Regular annual follow-ups are recommended to check occlusion and marginal status. With standardized use and maintenance, the restoration can maintain stable



functional and aesthetic performance over the long term. To learn more about restoration maintenance, post-insertion care, and long-term durability, visit our product page or Contact Our Sales Team for technical support.

Q13 Will cast-ceramic restorations develop black gum lines like porcelain-fused-to-metal (PFM) restorations?

A: No. Cast ceramics are all-ceramic, non-metallic materials with stable chemical properties. They do not release metal ions, and long-term wear will not cause gingival margin staining or form grayish-black lines. Additionally, the material features excellent biocompatibility with extremely low irritation to the gingival mucosa. Restorations in the aesthetic zone will not disrupt the natural appearance of the gums, making them an ideal choice for anterior aesthetic restorations. To learn more about cast-ceramic restorations, biocompatibility, and anterior aesthetic solutions, visit our product page or Contact Our Sales Team for technical support.

Q14 Will the color of press-formed restorations become lighter or show color discrepancies after grinding and polishing?

A: There will be no obvious color discrepancy. This cast-ceramic uses a monochromatic (body-colored) formulation, where the pigments are evenly distributed throughout the entire structure of the ceramic ingot, rather than just on the surface. Adjustments and grinding will only slightly alter the shade due to thickness changes; they will not cause color stratification or expose the uncolored core (white, uncolored core). This is a core advantage of body-colored ceramics, as it ensures that the margins and adjusted surfaces of the restoration maintain a uniform and consistent shade. To learn more about our monochromatic cast-ceramic ingots, color stability, and restorative consistency, visit our product page or Contact Our Sales Team for technical support.

Q15 Does this cast-ceramic possess the fluorescent properties of natural teeth? Will it look unnaturally white under photography and strong light?

A: The formulation simulates the natural fluorescence effect of natural teeth. Under strong light environments such as ultraviolet light and flashlights, it avoids looking like a "ceramic feel" of chalky white or grayish. Its fluorescence performance is close to that of natural teeth, and it can present natural and realistic visual effects under photography and social distances without forming obvious visual discrepancies with adjacent teeth, making it suitable for high-demand anterior aesthetic restorations. To learn more about cast-ceramic fluorescence effects, optical simulation, and high-demand anterior aesthetic solutions, visit our product page or Contact Our Sales Team for technical support.

Q16 What is the recommended disinfection method for cast-ceramic restorations before insertion? Can high-temperature and high-pressure sterilization be used?

A: Before insertion, it is recommended to use 75% medical alcohol for wiping and disinfection, or short-term immersion in a dental-specific neutral disinfectant to meet clinical sterile requirements. High-temperature and high-pressure sterilization is not recommended; a high-temperature and high-



pressure environment of 121°C may alter the crystalline phase of the ceramic surface, affecting surface gloss and color stability. Long-term immersion in highly corrosive disinfectants is also not recommended to avoid corroding the ceramic surface and reducing surface smoothness. To learn more about cast-ceramic disinfection guidelines, post-processing care, and clinical insertion protocols, visit our product page or Contact Our Sales Team for technical support.

Q17 What are the risks and precautions when performing cast-ceramic veneers on anterior cases with deep overjet and tight occlusion?

A: Such cases involve protrusion and high occlusal forces, and directly performing ultra-thin veneers carries risks of chipping and debonding. Clinical recommendations include: appropriately increasing tooth preparation to ensure a minimum restoration thickness of > 0.4 mm; avoiding protrusive occlusal contact points during design and fully adjusting the occlusion to eliminate premature contacts; prioritizing a wrap-around veneer design to increase lingual support. For severe deep overjet cases, it is recommended to first improve the occlusal relationship through orthodontics before proceeding with aesthetic restoration to ensure higher long-term reliability. To learn more about deep overjet and tight occlusion cases, veneer design considerations, and clinical restorative precautions, visit our product page or Contact Our Sales Team for technical support.

Q18 Can failed pressable restorations be recycled and remelted for secondary heat pressing?

A: Recycling and remelting for secondary use are not recommended. Repeated high-temperature melting alters the crystalline phase ratio and particle size distribution within the ceramic, leading to a decrease in material strength, an increase in brittleness, and color shifts. Furthermore, the recycling process easily introduces investment material debris and impurities, significantly increasing the risk of internal defects and bubbles within the restoration. To ensure clinical restoration quality, failed press castings are recommended to be discarded. To learn more about pressable glass-ceramics, material processing guidelines, and quality control solutions, visit our product page or Contact Our Sales Team for technical support.

Q19 When clinically adjusting cast-ceramic restorations, how should one operate to avoid chipping? What tools are more suitable?

A: For the coarse grinding stage, fine-grit diamond burs are recommended, using light pressure and low-speed grinding to avoid heavy impact. For fine grinding and finishing, silicone polishers are used for progressive refinement, and finally, ceramic polishing paste is applied to restore gloss. Throughout the adjustment process, water cooling is recommended to prevent local overheating from causing microcracks in the ceramic layer. For marginal areas, grind along the direction of the margins rather than striking vertically with force, which can significantly reduce the probability of marginal chipping and porcelain fracture. To learn more about clinical grinding techniques, tool selection, and anti-chipping precautions for pressable glass-ceramics, visit our product page or Contact Our Sales Team for technical support.



Q20 Will long-term consumption of colored drinks like strong tea, coffee, and cola cause noticeable staining on cast-ceramic restorations?

A: There will be no obvious internal staining. After sintering, the surface of the cast-ceramic is dense and smooth with extremely low porosity, making it difficult for pigment molecules to penetrate into the ceramic body. Its stain resistance is far superior to that of resin restorations. Long-term consumption of colored drinks may form slight exogenous pigment deposits on the surface, which can be easily removed through daily brushing and annual professional polishing without affecting the underlying shade of the restoration itself. To learn more about cast-ceramic stain resistance, surface density, and long-term aesthetic maintenance, visit our product page or Contact Our Sales Team for technical support.

Q21 Can cast ceramics be used for bite reconstruction cases? What situations are they suitable for?

A: They can be used for partial-zone bite reconstruction, especially suitable for bite raising and morphological reconstruction in the anterior aesthetic zone, balancing both function and aesthetics. In the posterior region, bite height can be restored in small ranges using inlays and onlays. However, for full-mouth severe bite reconstruction, long-span posterior cases, or cases with heavy occlusal forces, high-strength zirconia materials are more recommended due to their more adequate mechanical redundancy. Cast ceramics are more suitable for local bite reconstruction scenarios with high aesthetic requirements and moderate stress. To learn more about cast ceramics for bite reconstruction, partial-zone applications, and restorative material selections, visit our product page or Contact Our Sales Team for technical support.

Q22 Will uncleared residual resin cement at the margins after bonding cause gum problems? How can it be cleaned more safely?

A: Residual cement at the margins will continuously irritate the gingiva, causing gingivitis and gingival redness/swelling. It can also adsorb pigments to form black lines, affecting aesthetics. The recommended cleaning time is when the resin cement is in a semi-cured (gel) state, using a plastic probe or dental floss to gently scrape away the excess. After complete curation, use finishing strips and silicone wheels to finely polish the margins. Note that sharp metal tools should not be used to vigorously scrape the ceramic margins to avoid causing restoration chipping. To learn more about resin cement cleaning techniques, marginal care, and safe post-bonding procedures, visit our product page or Contact Our Sales Team for technical support.

Q23 For porcelain ingots of the same shade, do restorations with different thicknesses show large differences in final color? What should be noted during design?

A: The difference is quite noticeable. The thicker the restoration, the higher the color saturation and the stronger the masking ability; the thinner the restoration, the higher the translucency, making it easier to show through the underlying tooth color. Design recommendations: For areas with greater thickness at the cervical part, a shade one level lighter can be appropriately selected; for ultra-thin incisal regions, high-translucency shades should be prioritized; if the abutment tooth is



dark and restoration thickness is insufficient, LT (low translucency) series or opaque resin cement should be prioritized to offset the color difference caused by thickness. To learn more about ceramic thickness effects on shade, design recommendations, and optical management solutions, visit our product page or Contact Our Sales Team for technical support.

Q24 Does tooth sensitivity to hot and cold after cast-ceramic restoration result from high thermal conductivity of the material?

A: It is not caused by the material itself. The thermal conductivity of glass-ceramics is much lower than that of metals, and under normal thickness, it will not directly transmit hot and cold stimuli to the dental pulp. Common causes of postoperative sensitivity include: excessive tooth preparation leading to exposed dentin, transient irritation of dentin by bonding acid etching, occlusal high points transmitting occlusal stress, and marginal misfit causing infiltration of thermal stimuli. Most are transient symptoms that can resolve on their own within 1-2 weeks; persistent sensitivity requires checking the occlusion and marginal fit. To learn more about postoperative sensitivity causes, glass-ceramic thermal properties, and clinical troubleshooting solutions, visit our product page or Contact Our Sales Team for technical support.

Q25 Will multiple glazing and repeated sintering affect the strength and crystalline phase stability of cast-ceramics?

A: Within the standard sintering temperature range, performing 2-3 staining and glazing firings has a minimal impact on the crystalline phase structure and mechanical strength of the material, which falls within an acceptable clinical range. However, repeated high-temperature sintering exceeding 5 times can lead to excessive crystal growth inside the ceramic, decreased material toughness, and increased brittleness, while potentially causing color shifts and decreased translucency. Clinical operations should try to control the number of firings and avoid meaningless repeated sintering. To learn more about sintering cycles, multi-firing limits, and mechanical stability of cast-ceramics, visit our product page or Contact Our Sales Team for technical support.

Q26 Does this pressable ceramic support layered multi-shade heat pressing? How can a more natural aesthetic effect be achieved?

A: It supports the layered heat-pressing process. Conventional aesthetic cases can adopt a double-layer pressing scheme of "dentin-shaded ceramic ingot as the core + incisal translucent shade as the surface layer". By pressing the inner dentin layer first and then investing and pressing the outer enamel/incisal translucent layer, it can restore the natural gradient of tooth color from inside out. Compared to single-layer pressing with external staining, layered pressing provides a more natural depth of color, higher wear resistance, and longer-lasting aesthetic performance. To learn more about layered heat-pressing techniques, multi-shade ceramic ingots, and natural aesthetic solutions, visit our product page or Contact Our Sales Team for technical support.

Q27 What polishing tools are recommended for restorations after heat-pressing? How can a lustrous enamel-like finish be achieved?



A: For the coarse grinding stage, diamond burs are recommended to refine the shape and margins; for fine grinding, silicone polishers should be used to gradually refine the surface. Finally, use ceramic-specific polishing paste with wool buffs or bristle brushes for high-shine polishing. Since the reaction layer of the material is thin, excessive grinding is not required; after precise polishing, a high-gloss texture close to natural enamel can be achieved. Alternatively, a final layer of glaze powder can be sintered to obtain a more uniform and durable high-gloss surface, which also enhances stain resistance. To learn more about polishing techniques, recommended tools, and glazing procedures for our pressable ceramics, visit our product page or Contact Our Sales Team for technical support.

Q28 What are the different tips for choosing ceramic ingot shade and translucency between ultra-thin veneers and full crowns?

A: When making ultra-thin veneers, the underlying tooth color has a greater impact; for discolored abutments, prioritize selecting LT (low translucency) ingots to mask the base color, while for vital teeth, select HT (high translucency) ingots to enhance natural appearance. It is also recommended to choose a shade one level brighter for veneers to offset the combined color of the resin cement and the underlying tooth. When making full crowns, the restoration has sufficient thickness and higher color saturation, so you can select the corresponding shade based on routine color matching. For non-vital teeth or severe discoloration, it is suggested to choose the LT series combined with an internal masking treatment to ensure a uniform final shade. To learn more about shade selection techniques, translucency management for veneers and crowns, and clinical optical solutions, visit our product page or Contact Our Sales Team for technical support.

Q29 Must dedicated investment materials be used? Are common ceramic investment materials compatible?

A: It is recommended to prioritize using the dedicated ceramic investment material within the same system, which can control the thickness of the reaction layer to the minimum, ensuring surface finish and dimensional accuracy. While common phosphate-bonded ceramic investment materials can also be used, they may lead to a thicker reaction layer and decreased surface finish, requiring more post-processing grinding and carrying a risk of reduced marginal accuracy. For high-quality aesthetic restoration results, it is recommended to use the dedicated matching investment material. To learn more about compatibility with investment materials, optimizing reaction layers, and achieving high-precision restorations, visit our product page or Contact Our Sales Team for technical support.

Q30 What are the technical considerations for the sprue design of wax patterns, and how should adjustments be made for different restorations?

A: The sprue is the channel for ceramic material filling, and its design directly affects the success rate of heat pressing and the density of the restoration. The general principles are: the cross-sectional area of the sprue should not be less than the maximum cross-sectional area of the restoration; the position should be chosen at the thickest, non-functional, and non-aesthetic area of the restoration, avoiding the occlusal surface and labial/buccal aesthetic surfaces. For small veneers



and inlays, a single sprue with a diameter of 1.0-1.2 mm is sufficient; for single crowns and onlays, a sprue of 1.5-2.0 mm is recommended, with auxiliary vents added when necessary to avoid incomplete distal filling and internal residual bubbles. A smooth transition should be made at the connection between the sprue and the wax pattern to reduce stress concentration and prevent edge chipping when removing the sprue after heat pressing. To learn more about sprue design, heat-pressing techniques, and optimization guidelines for different restorations, visit our product page or Contact Our Sales Team for technical support.

Q31 What are the most suitable sandblasting parameters for cleaning investment materials and the reaction layer after ring removal in heat pressing?

A: In the coarse cleaning stage, first use 110 um aluminum oxide grit at a pressure of 0.3–0.4MPa to remove large chunks of investment material, maintaining a distance of 1–2cm with even sweeping movements to avoid localized high-pressure impact on the margins. For fine cleaning of the reaction layer, switch to 50mu fine grit at 0.2MPa low pressure, focusing on fine areas such as the cervical margins and proximal surfaces until the surface presents a uniform ceramic texture. Excessive sandblasting pressure or excessively coarse grit will over-abrade the ceramic layer and damage marginal precision, while insufficient sandblasting will leave residues of the reaction layer, affecting subsequent staining and bonding effects. A two-step tiered treatment is required to balance efficiency and precision. To learn more about sandblasting parameters, reaction layer removal, and precision finishing guidelines for pressable glass-ceramics, visit our product page or Contact Our Sales Team for technical support.

Q32 In the layered heat-pressing technique, how can the bonding strength between the inner and outer ceramic layers be ensured to avoid inter-layer delamination?

A: The core is to ensure that the surface of the inner ceramic layer is rough and clean, and that the heat-pressing parameters match. After heat-pressing the inner dentin ceramic layer in the first step, remove the surface reaction layer, sandblast to roughen it, clean and dry it before investing and pressing the outer enamel ceramic layer. You should not press the second layer directly onto a smooth inner layer. Meanwhile, the inner and outer ceramic materials must be formulations of the same system with matching sintering temperature ranges to avoid poor fusion bonding. Under standardized operation, the layers are in a fusion-bonded state, with a bonding strength close to single-piece pressing, and inter-layer delamination will not occur under normal occlusal stress. To learn more about layered heat-pressing techniques, inter-layer bonding strength, and processing guidelines, visit our product page or Contact Our Sales Team for technical support.

Q33 How can process adjustments be used to improve the marginal fit of cast-ceramic restorations?

A: Precise control can be achieved through three links: First, in the wax pattern production stage, ensure that the margins are continuous, smooth, and without steps, and that the wax pattern margins completely fit the master die. Second, in the investment stage, select a dedicated investment material with a matching expansion rate, and fine-tune the expansion amount by



controlling the powder-liquid ratio to compensate for the shrinkage of the wax pattern and ceramic material. Third, in the heat-pressing stage, strictly follow the standard heating and heat-pressing procedures to avoid mold deformation and restoration dimensional deviation caused by excessively fast heating. Under multi-link coordinated control, the marginal gap of the restoration can be controlled within a high-precision range acceptable for clinical use. To learn more about process adjustments, marginal fit optimization, and high-precision techniques for cast-ceramics, visit our product page or Contact Our Sales Team for technical support.

Q34 Do the heat-pressing temperature and pressure parameters need to be adjusted when making different restorations such as veneers, inlays, and full crowns?

A: The core heat-pressing temperature range for the same series of ceramic materials is consistent, but fine-tuning can be made based on the volume and structure of the restoration. Ultra-thin veneers and small inlays have small volumes and low filling resistance, and can be pressed at the lower limit of the standard temperature to avoid excessive fluidity of the ceramic material and the occurrence of flashes caused by overheating. Full crowns and large onlays have large volumes and complex structures; it is recommended to use the upper limit of the temperature and appropriately extend the holding time to ensure that the ceramic material is fully melted and completely filled. Pressure parameters can usually be maintained at the equipment's standard value, while thin-walled complex parts can have their initial heat-pressing pressure appropriately increased to improve filling integrity. To learn more about heat-pressing parameter adjustments, temperature/pressure optimization, and fabrication guidelines for different restorations, visit our product page or Contact Our Sales Team for technical support.

Q35 In addition to surface external staining, do cast-ceramics support pre-coated internal staining techniques? What are the advantages of the effect?

A: It supports the pre-coated internal staining technique. The operation method is as follows: evenly brush a special ceramic stain on the surface of the completed wax pattern, dry it, and then perform embedding and heat pressing. The pigment will melt and diffuse into the interior of the ceramic layer along with the ceramic material, forming an internal staining effect. Compared with surface external staining, internal staining provides a more three-dimensional and natural color. Since the color is located inside the ceramic layer, it has higher wear resistance and will not fall off due to adjustment or grinding, making it suitable for overall base color adjustment and deep texture shaping. The disadvantage is low fault tolerance, as it cannot be modified after heat pressing. It is usually used for standardized base color construction, and detail modification still needs to be completed with surface external staining. To learn more about pre-coated internal staining techniques, color performance, and aesthetic optimization for cast-ceramics, visit our product page or Contact Our Sales Team for technical support.



Appendix

Appendix	Content
A	Printer Model Index
B	Resin Model Index
C	Stain Model Index
D	Ceramic Material Index
E	Adhesive Index
F	Compatibility Test Record Form
G	Common Defect Image Reference
H	Printer Printing Parameters (Online Query)

Final Query Logic

Printer → Printer Model → Resin → Compatibility → Printing Parameters → Post-Processing →
Staining Agent / Surface Treatment → Ceramic / Adhesive → Final Application

File Positioning

The printing parameters, material compatibility levels, and technical conclusions for the printers documented in this file are all based on actual measured verification results; newly added models will be continuously updated according to new tests.

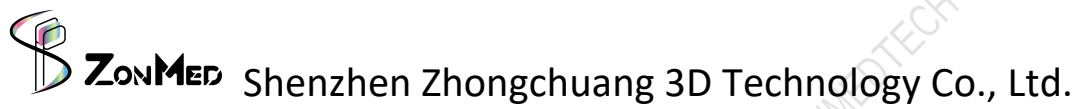
Appendix H: Printer Printing Parameters (Online Query)

A comprehensive printing parameter database containing 1,782 sets (covering all brand models) has been published online and is continuously updated. All parameters are verified through actual testing. To facilitate access to the latest parameters at any time, this guide will not list them individually. Please scan the QR code below or visit the following URL for online queries.

Online query website: <https://www.zonmedtech.com/print-parameters-brands/>



Search method: Scan the QR code with your phone or open the URL above in a browser → Filter by brand / model / material → View complete parameters such as layer thickness, exposure time, lifting/retraction speed, etc.

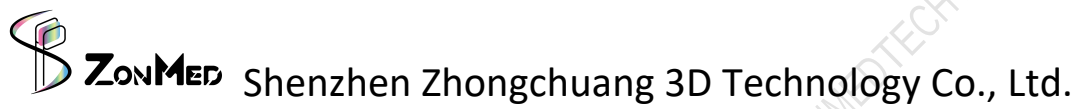


 **ZonMed** Shenzhen Zhongchuang 3D Technology Co., Ltd.

Appendix 2 Material × Dye Compatibility Matrix (Blank)

[illegible]

Recorder: _____ Reviewer: _____ Date: _____



 **ZonMed** Shenzhen Zhongchuang 3D Technology Co., Ltd.

Appendix 3 Comprehensive Quick Reference Table (Blank)

[illegible]

Recorder: _____ Reviewer: _____ Date: _____



Appendix 5 Staining Effect Evaluation Form

[illegible]

Recorder: _____ Reviewer: _____ Date: _____



Appendix 7 Sintering / Curing Condition Record Form

[illegible]

Recorder: _____ Reviewer: _____ Date: _____

SEO Keywords / Long-tail Terms

- 3D printing resin compatibility for dental labs
- dental ceramic 3D printer material guide
- troubleshooting dental 3D printing resin issues
- polymer dyes for dental 3D printed parts
- surface treatment for 3D printed dental models
- dental lab resin printer compatibility chart
- best 3D printing materials for dental crowns

- compatible resins for Asiga dental printers
- Formlabs dental resin compatibility guide
- post-processing 3D printed dental appliances
- dental surgical guide 3D printing materials
- ceramic vs resin for dental 3D printing
- dental model 3D printing material selection
- biocompatible resins for dental applications
- optimizing dental 3D print surface finish
- dental aligner 3D printing material guide
- troubleshooting 3D printed dental prosthetics
- dental 3D printing material strength comparison
- polymer dye compatibility for dental resins
- dental 3D printing support material removal
- guide to dental 3D printing sintering ceramics
- dental 3D printing material sterilization compatibility