kuraray

Noritake

Super Porcelain EX-3

Porcelain for metal ceramic dental restorations

Noritake Super Porcelain EX-3

Technical Instructions

Kuraray Noritake Dental Inc.

Contraindications:

If the patient is hypersensitive to potassium-aluminosilicate glass or any other components, this product must not be used.

Caution:

1. If the patient or the dental professional demonstrates a hypersensitivity reaction, such as rash, dermatitis, etc., discontinue use of the product and seek medical attention immediately.
2. When mixing materials or grinding a restoration being fabricated, use an approved dust mask and vacuum with air filter to protect your lungs from inhaling the dust.
3. When mixing materials or grinding a restoration being fabricated, use safety glasses to prevent the dust from getting into your eyes. If the dust gets into your eyes, immediately rinse with copious amounts of water and consult a physician.
4. Do not use for any purposes except for fabricating dental restorations. This product is for dental application only.
5. Do not touch the items heated by the furnace with your bare hands.
6. Paste Opaque, Paste Opaque Modifier, PASTE OPAQUE LIQUID, IS LIQUID, ES LIQUID and UP LIQUID are flammable. Do not use them near fire or high-temperature objects.
7. IS LIQUID is a stimulant liquid. When using it, have good ventilation and if necessary wear an approved dust mask, safety glasses and gloves.
8. Stain and plaque can accumulate on a restoration, once it has been put in position in the patient's oral cavity, depending on the patient's eating habits or food choices. Instruct patients about the importance of cleaning their restorations.

Precautions in use:

1. For metal framework made of Cobalt-Chrome alloy, Nickel-Chrome alloy without Be and Noble alloys containing 75-85 percent Palladium and Copper, use NP Bonder of Paste Opaque for the first application.
2. When using a porcelain furnace for the first time, perform a baking test run in advance, since the working temperatures of porcelain furnaces may vary from one device to another.
3. Adjust the temperature and time according to the size of the restoration, referring to Baking schedule of page 25.
4. Use only the product with the LIQUIDs named in the Technical Instructions; otherwise, the restoration might change color when it is baked.
5. Do not use Internal Stain as an alternative to External Stain. Do not use External Stain as an alternative to Internal Stain.
6. Paste Opaque and Paste Opaque Modifier have liquid on the surface. Do not discard this liquid or stir the liquid into the paste. Tilt the container to reveal a portion of Paste Opaque where there is no liquid, and put this paste onto a pallet and blend to a smooth consistency.
7. Use caution when mixing two shades of Paste for color adjustment to avoid air bubbles from entering the mixture.
8. Paste Opaque will harden gradually over time after it has been dispensed onto the pallet. Use as soon as possible after dispensing. Do not use hardened Paste Opaque.
9. Do not mix Powder Opaque with Paste Opaque.
10. Do not mix this product with other porcelain materials or use it in unauthorized combinations.

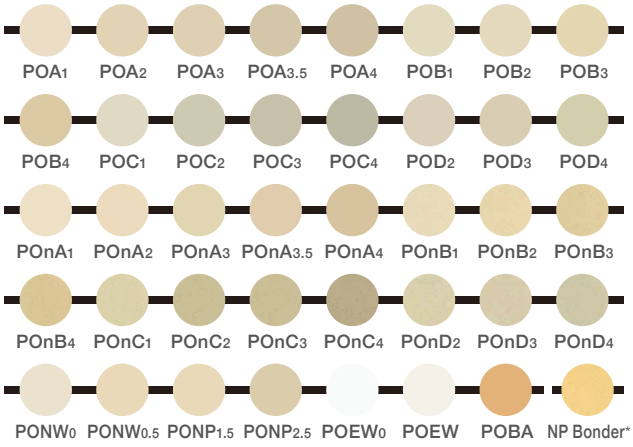
Storage:

1. Store in a cool and dry place. Keep away from direct sunlight.
2. The product should be stored at 1-30°C(33.8-86°F).
3. Place the cap securely back on the container after use.
4. The product must be stored in an appropriate place where only dental personnel have access.
5. The product must be used by the expiration date indicated on the package.
6. Do not store Paste Opaque, Paste Opaque Modifier, PASTE OPAQUE, IS LIQUID, ES LIQUID and UP LIQUID near fire or high-temperature objects.

Color Combination Table

Paste Opaque

Content: 6g / 2.4mL



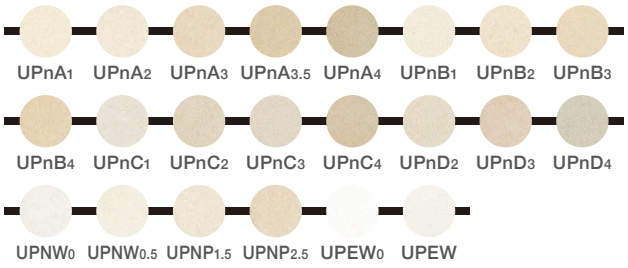
*When the different types of alloy is used, NP Bonder color will result in different color outcome.

Paste Opaque Modifier

Content: 3g / 1.2mL

Universal Paste Opaque

Content: 6g

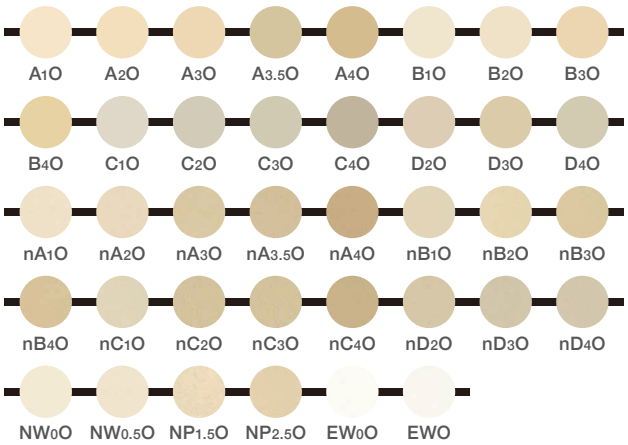


Universal Paste Opaque Modifier

Content: 3g

Powder Opaque

Content: 10g / 50g / 200g

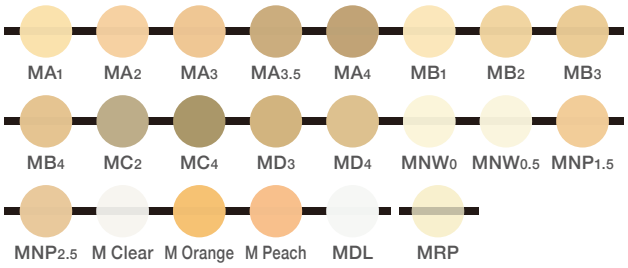


Powder Opaque Modifier

Content: 10g / 50g

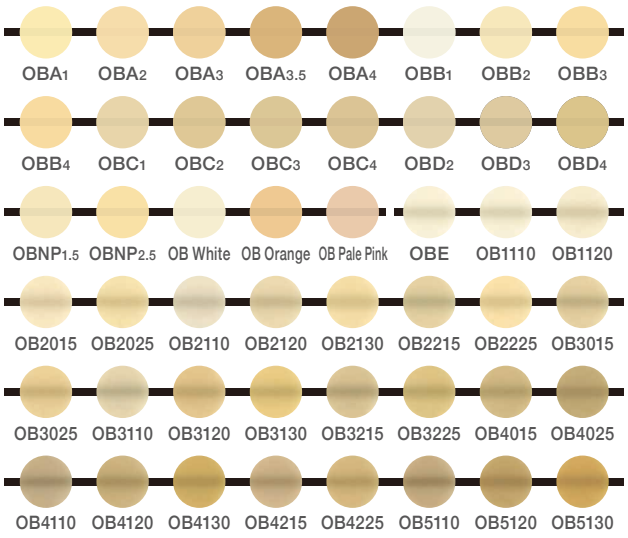
Margin

Content: 10g / 50g



Opacious Body

Content: 10g / 50g / 200g

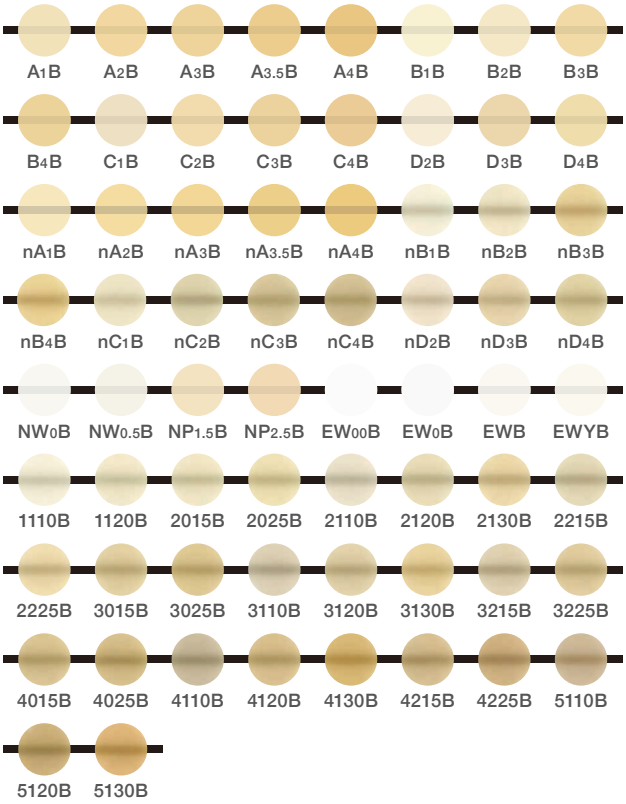


Cervical

Content: 10g / 50g / 200g

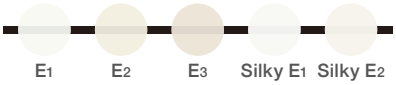
Body

Content: 10g / 50g / 200g



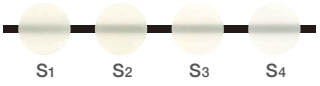
Enamel

Content: 10g / 50g / 200g



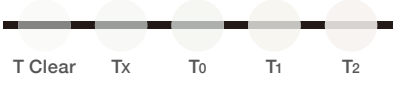
Speed Enamel

Content: 10g / 50g / 200g



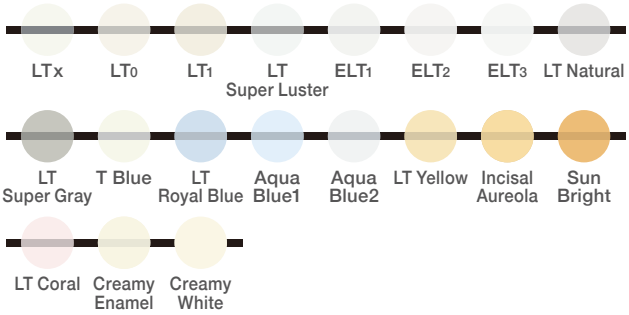
Translucent

Content: 10g / 50g / 200g



Luster

Content: 10g / 50g / 200g



Clear Cervical

Content: 10g / 50g / 200g

Mamelon

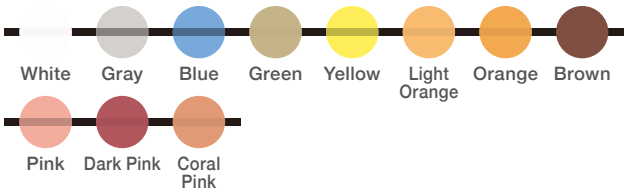
Content: 10g / 50g

Tissue

Content: 10g / 50g

Modifier

Content: 10g / 50g



Add-on

Content: 10g / 50g

Internal Stain

Content: 3g

External Stain

Content: 3g / (Glaze 10g / 30g)

Addmate

Content: 10g

Liquids

Each of this product's components must be mixed with the precise liquid, as specified.

(Components other than Paste Opaque, Paste Opaque Modifier, Universal Paste Opaque, Universal Paste Opaque Modifier, Internal Stain, and External Stain may be mixed with distilled water.)

Component	Correct liquid to use								
	PASTE OPAQUE LIQUID 10mL	UP LIQUID 10mL	OPAQUE LIQUID 10mL/100mL	FORMING LIQUID*1 10mL/100mL	Magic Former 20mL	MEISTER LIQUID*2 100mL	IS LIQUID 10mL/100mL	ES LIQUID 10mL/100mL	ADDMATE FORMING LIQUID 10mL
Paste Opaque	●								
Paste Opaque Modifier	●								
Universal Paste Opaque		●							
Universal Paste Opaque Modifier		●							
Powder Opaque			●						
Opaque Modifier			●						
Margin				●	●				
Opacious Body				●		●			
Cervical				●		●			
Body				●		●			
Enamel				●		●			
Speed Enamel				●		●			
Translucent				●		●			
Luster				●		●			
Clear Cervical				●		●			
Mamelon				●		●			
Tissue				●		●			
Modifier				●		●			
Add-on				●		●			
Internal Stain							●		
External Stain								●	
Addmate									●

*1 A liquid used for mixing tooth-colored porcelain powder. It helps make it easier to apply porcelains, thus shortening the operation time.
*2 Slow-drying FORMING LIQUID for porcelains.

Directions for use

1 Preparation of metal framework

1 | Adjusting the metal framework

Check the fit on the plaster model between the metal framework and the abutment at the inner surfaces, margins, etc. Confirm the thickness of the metal framework and adjust its contours using a carbide bur, or similar rotary instrument, so that a uniform layer of porcelain can be placed on it.
The appropriate thickness is 0.3 mm for precious metal alloys and 0.2 mm for Ni-Cr alloys. For the correct points to use, see the Instructions for Use supplied with the metal being used for the framework.

2 | Degassing

After contouring, sandblast the veneering surface of the framework according to the Instructions for Use supplied with the metal being used for the framework. Then, clean the surface with ultrasound for about approximately 10 minutes. Perform degassing according to the Instructions for Use that apply to the metal being used. Degassing must be performed to ensure better wetting of the metal framework by the porcelain.

2 Opaque application and baking

Apply Paste Opaque or Powder Opaque over the framework until the metal is completely hidden.

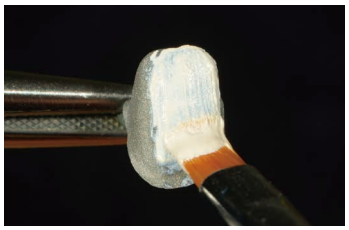
Paste Opaque

1 | How to use Paste Opaque

Scoop out the desired amount of the desired shade of Paste Opaque or Universal Paste Opaque and put it on the pallet. Note that the surface of the Paste Opaque or Universal Paste Opaque in the container will be covered with excess liquid. Tilt the jar and dip out from the non-liquid-covered portion.

Attention

Adjust the viscosity of the Paste Opaque or Universal Paste Opaque on the pallet using PASTE OPAQUE LIQUID or UP LIQUID.
Do not over-dilute the paste; otherwise, cracks may form due to shrinkage when the restoration is baked. Only a dry brush should be used. DO NOT mix in even a small amount of water.

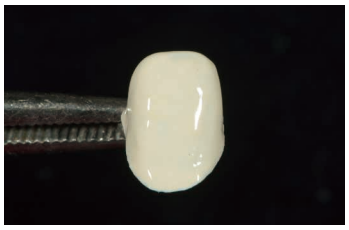


2 | Wash application

Make sure the surface of the metal framework is dry. Apply a thin coat of Paste Opaque or Universal Paste Opaque to the entire surface of the metal framework, rubbing it in evenly.

For metal framework made of cobalt-chrome alloy, nickel-chrome alloy without Be and Noble alloys containing 75-85 percent palladium and copper, use NP Bonder of Paste Opaque. First, apply a thin coat of NP Bonder to the entire dry surface of the metal framework by rubbing. (No color adjustment is available, in this case.)

NP Bonder



3 | First application and baking

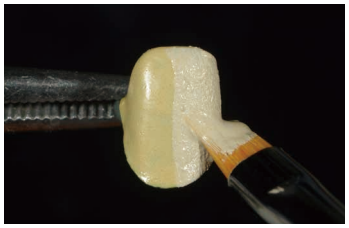
Apply an additional coat of Paste Opaque or Universal Paste Opaque, thick enough that it masks the metal under the porcelain paste by approximately 70 percent.

If Paste Opaque's NP Bonder was used as the wash, that same product should also be used for the first application. Also note: NP Bonder should not be mixed with any other shade of Paste Opaque or Paste Opaque Modifier.

Check to determine if the Paste Opaque or Universal Paste Opaque has been layered too thickly in the proximal regions or near the lingual finishing line. Make sure that there is no residue of Opaque Paste remaining on the internal surface of the metal framework. Then bake the restoration according to **Baking Schedule 1**, **3**, **4**. After the restoration is baked, there should be a slight luster across the opaque surface.

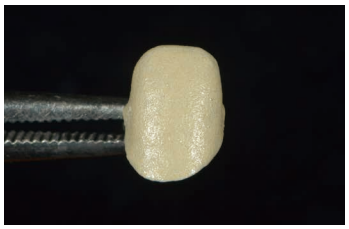
Attention

To avoid heating too rapidly, or having a hot metal framework cause the paste to dry from the inside out, place the restoration in a dish-shaped baking tray. Make sure the temperature inside the oven is less than 500°C (932°F); Paste Opaque or 400°C (752°F); Universal Paste Opaque before placing the tray on the firing platform.



4 | Second application and baking

After baking, apply an additional coat of Paste Opaque, Paste Opaque Modifier, Universal Paste Opaque, Universal Paste Opaque Modifier or a mixture of these. This time, completely mask the metal. Even if NP Bonder was used for the first application and baking phase, the target shade of Paste Opaque, Paste Opaque Modifier, Universal Paste Opaque, Universal Paste Opaque Modifier or a mixture of these should be used for the second application and baking.



Make sure that excess paste does not remain on the internal surface of the metal framework and bake the restoration according **Baking Schedule 1**,**3**,**4**. After baking, the restoration should have a slight luster across the opaque surface.

Attention

Paste Opaque Modifier "PO Earth Brown" and "PO Reddish Brown" and Universal Paste Opaque Modifier "UP Earth Brown" and "UP Reddish Brown" should be used separately.
If Earth Brown or Reddish Brown is mixed with other shades, the desired color will not be obtained after baking.

The color of the Paste Opaque Modifier and Universal Paste Opaque Modifier may be different before rather than after baking, due to the storage conditions and duration. In particular, "PO Yellow" may look greenish before baking. Be sure to perform a trial bake.

It is possible to use Powder Opaque for the second application.

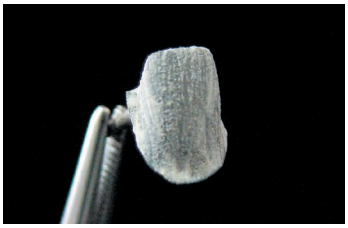
Baking Schedule	Porcelain Type	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
														with vacuum	In the air	
		min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa*1	°C	°F	°C	°F	min.	min.	min.
1	Paste Opaque (including NP Bonder)	8	500	932	500	932	65	117	96	980	1796	980	1796	-	1	0
3	Universal Paste Opaque (High Noble, Noble, Ni-Cr with Be alloys)	8	400	752	400	752	65	117	96	980	1796	980	1796	-	1	0
4	Universal Paste Opaque (Ni-Cr without Be, Co-Cr alloys)	8	400	752	400	752	65	117	96	1000	1832	1000	1832	-	1	0

*1 96kPa = 72cmHg (29 inchesHg)

Powder Opaque

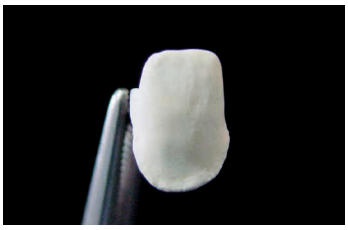
1 | First application and baking

Wet the surface of the metal framework with a moist brush.
Apply a thin layer of Powder Opaque (that has been made into a paste by mixing the powder with OPAQUE LIQUID), Opaque Modifier or a mixture of both across the entire surface of the metal framework by rubbing. Bake the restoration according to **Baking Schedule 5**.



Attention

Do not mix Powder Opaque with Paste Opaque, Paste Opaque Modifier, Universal Paste Opaque or Universal Paste Opaque Modifier.
If necessary, you can apply Powder Opaque seperately, after the first layer of Paste Opaque has been baked.



2 | Second application and baking

After the completion of the first baking, apply a layer of Powder Opaque, Opaque Modifier or a mixture of both, about 0.3 mm thick, and bake the restoration according to **Baking Schedule 6**.

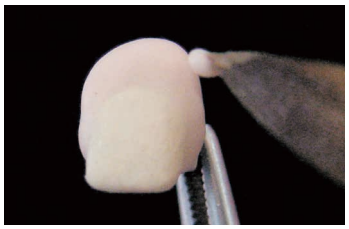
After baking, the restoration should have a slight luster across the opaque surface.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
5	3	650	1202	650	1202	55	99	96	950	1742	960	1760	-	-	0
6	5	650	1202	650	1202	55	99	96	950	1742	960	1760	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)

3 Cervical and Body building-up

For a collarless metal framework, first apply Margin to the margin area.
For Instructions how to use Margin, see page 13 of this manual.



1 Cervical

Mix Cervical, or a mixture of Body and Cervical, with FORMING LIQUID or MEISTER LIQUID. (See the section, “Color composition” on page 23 for the mixing ratio.) Layer the mixture on the cervical area of the metal framework.

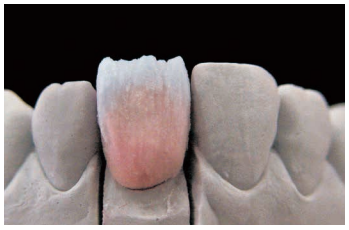
2 Body

Mix the Body with FORMING LIQUID or MEISTER LIQUID and then apply the mixture on the metal framework to shape a proper crown contour.

Cut the lingual, labial, and proximal surfaces back to make space for building up with Enamel. Then create the mamelon structure. Make sure that the Body porcelain remains at least 0.8 mm thick after it has been cut back.

If there is not enough space available to layer on the opaque, use Opacious Body.
For Instructions how to use Opacious Body, see page 15.
Adjust the shade using Modifier and / or Mamelon, if necessary.

4 Enamel building-up



Mix Enamel with FORMING LIQUID or MEISTER LIQUID, and apply the mixture one-third of the way from the incisal edge, so that the correct contour can be maintained. Be careful to avoid layering on too much Enamel. Too much Enamel will result in a whitish appearance.
Apply Translucent and Luster over the Enamel, where needed, to provide the necessary appearance of depth. For instructions how to use Luster, see page 17.

To reproduce a gingival color, layer Tissue as necessary.
For instructions how to use Tissue, see page 20.

5 Translucent building-up and baking

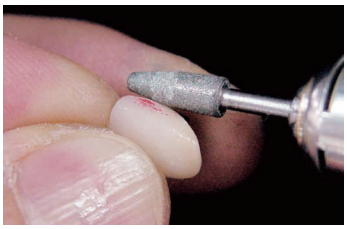
Mix Translucent with FORMING LIQUID or MEISTER LIQUID and layer the mixture on the incisal area of the Body and Enamel building-up.
With the consideration of shrinkage, building-up with translucent to 10% larger than the target size of the crown.

After building-up with Translucent, bake the restoration according to **Baking Schedule 10**.
After baking, the restoration should have a slight luster across the porcelain surface. Corrections for any thin spots, hollows, etc. can be made by adding porcelain and baking again according to **Baking Schedule 10**. If the correction involves adding just a little porcelain in the contact area, the highest baking temperature should be approximately 10 degrees lower than the one given in the baking schedule.

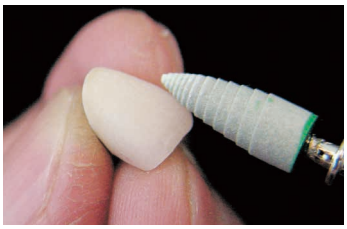
Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
10 *2	7	600	1112	600	1112	45	81	96	920	1688	930	1706	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)
*2 The baking conditions are established on the assumption that 1-3 units are baked. In case of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C(1696°F), high temperature 935°C(1715°F). In case of over 7 units, the dry-out time should be 15 min, release vacuum 930°C(1706°F), high temperature 940°C(1724°F).

6 Morphological correction



Use the straight part of a diamond bur to modify the contact area.
Create the labial groove with the tip part of a diamond bur. Proceed by working in the vertical direction first, then in the horizontal direction. Use the small head of a diamond bur to create the serration and perikymate.



Perform the final morphological correction, paying special attention to the symmetry of the tooth. Polish away any roughness, especially on the proximal and marginal areas, using a paper-abrasive material or silicone point.
After completing the morphological correction, clean the surface, as necessary.

7 Glaze and Stain application, baking and finishing

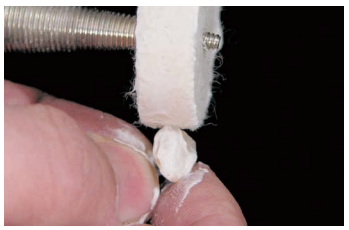
Reproduce the appropriate gloss using either method 1 or 2 below.

1 Reproducing gloss using External Stain (Glaze)

Mix External Stain Glaze with ES LIQUID and apply a thin coat of the mixture. Then, Bake the restoration according to **Baking Schedule 13**.
If the shade needs to be adjusted, apply a mixture of External Stain and ES LIQUID and bake. Different shades of External Stain may be mixed. For details, see page 16.
After baking, finish the restoration using silicone points, as necessary, and finish the restoration by polishing.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
13	5	650	1202	-	-	50	90	0	-	-	910	1670	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)



2 Reproducing gloss by self-glaze baking

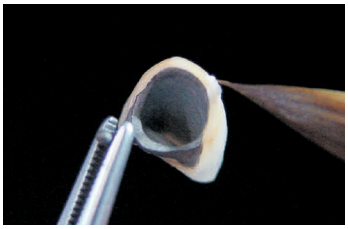
Using Pearl Surface C (for semi-finishing), perform a medium fine-polish before self-glaze baking.

After polishing, bake the restoration according to **Baking Schedule 12**.
To create varying levels of gloss on the surface, self-glaze the restoration at a lower temperature (30°C (54°F) to 40°C (72°F) lower than the usual glaze baking temperature). After baking, selectively fine-polish with Pearl Surface F (for finishing).

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
12 *2	5	650	1202	-	-	50	90	0	-	-	930	1706	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)
*2 The baking conditions are established on the assumption that 1-3 units are baked. In case of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C(1696°F), high temperature 935°C(1715°F). In case of over 7 units, the dry-out time should be 15 min, release vacuum 930°C(1706°F), high temperature 940°C(1724°F).

8 Additional building-up



Margin (MRP) and Add-on

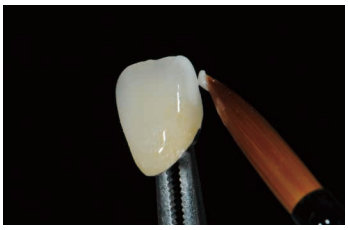
If there is insufficient contacts or contours on the margins after finishing, mix Margin MRP (Margin Retouching Powder) with FORMING LIQUID or Magic Former and build-up, followed by re-baking according to **Baking Schedule 14**. If there is insufficient contacts or contours on the crown, layer additional Add-on, followed by re-baking according to **Baking Schedule 15**.
Add-on baking can be performed simultaneously with self-glaze baking, using **Baking Schedule 12**.

Attention

Do not use Margin MRP before finishing, because It cannot withstand the high temperature. It should be used to correct the contacts or contours on the margins after finishing.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
12 *2	5	650	1202	-	-	50	90	0	-	-	930	1706	-	-	0
14 *3	5	650	1202	-	-	55	99	0	-	-	850	1562	-	-	0
15	5	650	1202	-	-	55	99	0	-	-	880	1616	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)
*2 The baking conditions are established on the assumption that 1-3 units are baked. In case of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C(1696°F), high temperature 935°C(1715°F). In case of over 7 units, the dry-out time should be 15 min, release vacuum 930°C(1706°F), high temperature 940°C(1724°F).
*3 When Magic Former is used, the dry-out time should be 7 min, pre-drying temperature 700°C(1292°F).



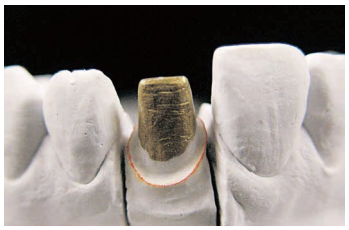
Addmate

You can use Addmate to make additional layers.
For instructions how to use Addmate, see page 21.

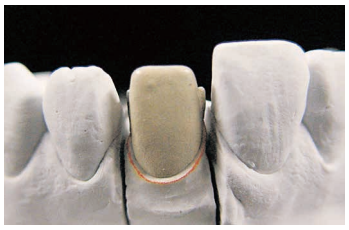
After baking, contour and polish the restoration using silicone points.

Margin

For a collarless metal framework, use Margin to reproduce excellent natural chroma around the cervical area. Keep in mind the instructions given below when preparing abutments.

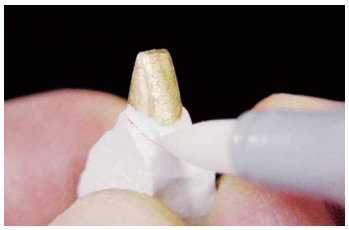


In order to fabricate a porcelain margin, a shoulder or a deep chamfer is required.
The common bevel chamfer preparation is too thin, and might result in breakage and/or make color accuracy difficult.



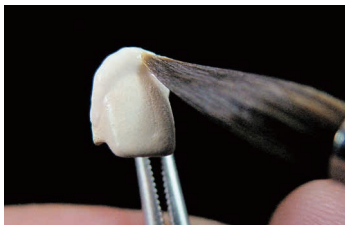
Applying and baking Opaque

The porcelain margin on the metal framework should be made approximately half (1/2) of the width on the shoulder.
Mask the metal framework according to section, "2. Opaque application and baking" on page 6.



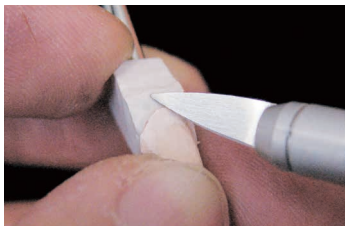
Applying the porcelain separating agent

Apply a plaster curing agent or a cyanoacrylate adhesive thinly on the margin area of the abutment tooth. Remove any excess agent.
After making sure the restoration surface is sufficiently dry, apply Magic Separator.



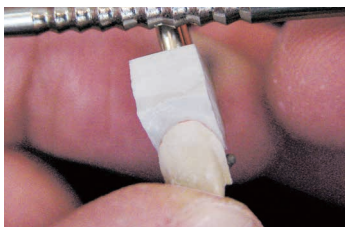
Building-up with Margin

Mix Margin with FORMING LIQUID or Magic Former. Apply an adequate amount of Margin on the gingival part of the metal framework.
Make sure the inside of the metal framework is clean. Put the metal framework onto the abutment die.



Adaptation to the die

Press Margin onto the cervical area with a spatula.
Do not apply too much Margin; this will avoid creating an unattractive opaque appearance.

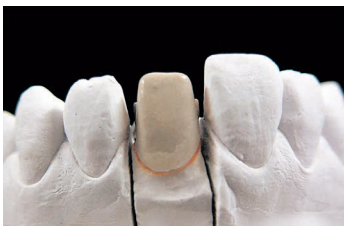


Condensation

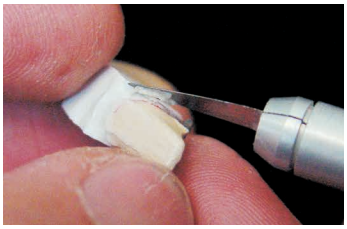
In order to minimize shrinkage of the porcelain, make repeated condensation phases using an appropriate instrument. Brush off any excess Margin Porcelain with a dry brush.

First Margin baking

Carefully and gently twist and pull the framework upwards away from the die to remove it.
Examine the framework's internal surface carefully.
Eliminate any excess particles using a dry porcelain brush and bake the restoration according to **Baking Schedule 7**.

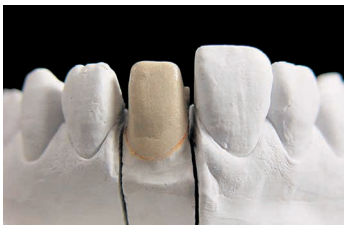


If there has been any shrinkage, perform additional applications of Margin.



Second application and baking

Reapply Magic Separator. Apply Margin to the margin area of the restoration by rubbing into the recess. Remove the restoration from the die. Check the internal surfaces of the metal framework before baking the restoration according to **Baking Schedule 7**.



After the second baking, check to make sure that the metal framework and the porcelain join smoothly on the labial side and at the margins.

Attention

If necessary, use Margin Porcelain Retouching Powder MRP to correct any thin spots, gaps, or hollows in the marginal area after finishing.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
7 *2	5	650	1202	650	1202	55	99	96	935	1715	945	1733	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)
*2 When Magic Former is used, the dry-out time should be 7 min, pre-drying temperature 700°C(1292°F), and the start vacuum temperature 700°C(1292°F).

Opacious Body

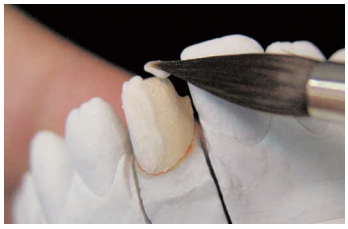
Opacious Body is formulated to have an intermediate level of translucency between that of Opaque and Body. The use of Opacious Body permits easy control of translucency. Opacious Body can be used with good effect for the following cases:

① **When the Opaque layer is reflected back too strongly, due to insufficient space for layering either across the whole area or a part of it;**

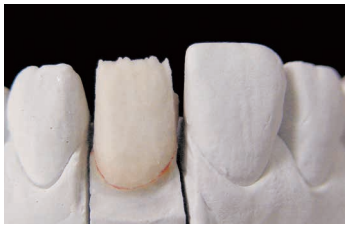
② **In some situations, due to different thicknesses of porcelain, e.g.,:**

a. The porcelain on the base of the pontic is so thick that the translucency there is different from that in the abutment area;
b. The translucency on abutments is different on a bridge due to different thicknesses or heights of porcelain on abutments area.

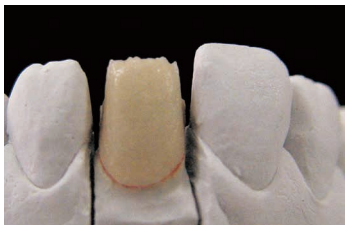
If there is not enough space available to build-up with the Body:



Apply Opacious Body, approximately 0.3 mm thick to the entire crown.



Create the mamelon structure on the incisal edge of the framework.

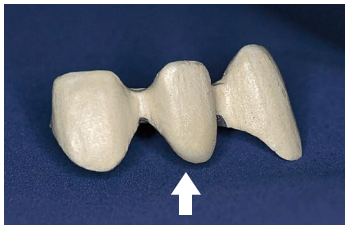


Bake the restoration according to **Baking Schedule 8**.
Build up with Body, Enamel and/or Translucent after baking.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
8 *2	7	600	1112	600	1112	45	81	96	920	1688	930	1706	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)
*2 The baking conditions are established on the assumption that 1-3 units are baked. In case of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C(1696°F), high temperature 935°C(1715°F). In case of over 7 units, the dry-out time should be 15 min, release vacuum 930°C(1706°F), high temperature 940°C(1724°F).

If the translucency of the pontic is different from that in the abutment area:



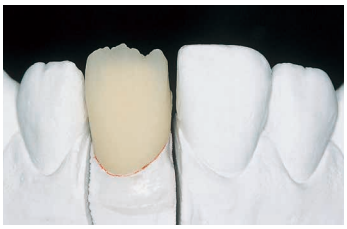
If the base of the pontic has a different level of translucency from that of the abutment because of a thick layer of porcelain on the pontic, apply Opacious Body on the base of the pontic.

Internal Stain

Internal Stain is used to reproduce the color of the dentin and special characterization. Apply Internal Stain over an area where there is not enough space for building-up with Body. This prevents transparency from the Body to the Opaque underneath, making it possible to adjust the color of the whole crown.
Internal Stain can be used when: 2 Opaque application and baking of page 6, 3 Cervical and Body building-up of page 9, 4 Enamel building-up of page 9, and 5 Translucent building-up and baking of page 10.

Attention

Internal Stain is meant exclusively for internal staining and will not leave the porcelain surface glossy if used by itself.
Before you use Internal Stain, make sure to bake the restoration.
If the surface of the crown needs to be stained, use External Stain.



Morphological correction

After building-up a dentin structure using porcelain and then baking, adjust the thickness of the porcelain on the labial side, across the incisal edge and the mamelon structure at the edges of the dentin, while checking the space allowed for building-up with Translucent and/or Luster.
After the completion of the morphological corrections, sandblast the surface of the restoration at a pressure of 0.3 MPa (43.5 PSI or 3 bar) with alumina particles and clean with ultrasound or steam.

First staining

Mix Internal Stain with IS LIQUID. Apply the mixture horizontally on the white bands, cervical areas and proximal surfaces. Bake the restoration according to **Baking Schedule 9**.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
9	3	650	1202	-	-	55	55	0	-	-	830	1526	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)

Second staining

Mix Internal Stain with IS LIQUID. Apply the mixture vertically to create check lines and enamel cracks. Bake the restoration according to **Baking Schedule 9**.
These baking processes are performed mainly to make sure the Internal Stain is well secured to the restoration surface. The porcelain on the restoration may look whitish at this point. Wet the porcelain with IS LIQUID to ascertain the actual color of the porcelain.

External Stain

External Stain is used to make color adjustments on the crown surface and provide characterization details for the incisal, dentin, and cervical areas.
There are A^+, B^+, C^+ and D^+ chroma-adjusting shades available to enhance the chroma of the porcelain applied.

After completing morphological corrections, check the color on the surface of the restoration. Apply External Stain (mixed with ES LIQUID) if necessary, followed by baking according to **Baking Schedule 13**.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
13	5	650	1202	-	-	50	90	0	-	-	910	1670	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)

Luster

Use Luster instead of or in combination with Translucent to reproduce the surface texture and color of the enamel.

Attention

Cases where the use of Luster is not recommended:

① If the tip of a metal framework is too close to the incisal edge of the porcelain.
② If the occlusal surface of a molar is not fully covered by porcelain.
③ If the porcelain is extremely thin; therefore, the reflection gives too opaque an effect.
In the above cases, the usual combination of Enamel and Translucent Porcelain should be used to produce a more natural appearance.

Shade	How to Use
LTx	Higher translucency and opal effect than LT_0. For a highly translucent incisal area. Use this alone or as a mixture with other Luster shades.
LT_0	Used mainly for a highly translucent incisal edge and for the simulation of highly translucent enamel (likely to be seen through the dentin).
LT_1	Used for areas built-up with Translucent T_1. Effective for achieving the brightness of natural tooth enamel.
LT Super Luster	Highest opal effect than other Luster shades. For reproducing bright enamel zone due to a the strong light reflection. Use this alone or as a mixture with other Luster shades .
ELT_1	Used when the target shade is EW/EWY.
ELT_2	Used when the target shade is EW_{00}/EW_0.
ELT_3	This is the brightest of the ELTs. Suitable for EW shades (EW/EWY/EW_{00}/EW_0).
LT Natural	Used mainly on incisal edges and proximal surfaces, to reproduce a high level of translucency, as seen especially among the elderly.
LT Super Gray	More gray than LT Natural. Useful for reducing brightness on incisal edges and for creating beautiful contrast effects. Use this alone or as a mixture with another shade of Luster or Translucent Tx.
T Blue	Used mainly for the incisal edges of young people's teeth, to reproduce their pale blue and youthful translucency.
LT Royal Blue	More blue and translucent than Aqua Blue1. For reproducing a blue zone.Use this alone or as a mixture with other Luster shades.
Aqua Blue 1	Somewhat bluer than T Blue. Used to reproduce the blue zone. This shade is used alone or mixed with another shade of Luster or Translucent Tx.
Aqua Blue 2	Somewhat bluer than T Blue, with a slight gray cast. Used to reproduce the blue zone at a lower tone than Aqua Blue 1. This shade is used alone or mixed with another shade of Luster or Translucent Tx.
LT Yellow	Used to reproduce a light "HALO EFFECT", to show depth in the central occlusal surface. Apply LT Yellow over Mamelon shade to suppress the orange tone.
Incisal Aureola	Used to reproduce the "HALO EFFECT" caused by the full reflection of light on the incisal edge.
Sun Bright	Used to reproduce the orange tone on the incisal edge of enamel, seen among the middle aged and elderly. Used also to reproduce a deeper orange or amber enamel color.
LT Coral	Pale pink color. For adding pink touch to cervical, occlusal and incisal areas.
Creamy Enamel	Used mainly on the cusps and ridges of molars, and occasionally on the area from the mesial and distal proximal surfaces at the incisal edge of anterior teeth, to the area near the corners of the incisal edge.
Creamy White	Used to reproduce a dense, milky effect, mixed with another shade of Luster.

Luster LT_1 is the basic Luster shade. Here are some examples of how to use Luster shades to reproduce natural tooth color accurately.

Examples of how to use Luster shades

Application of T Blue near the incisal edges of both proximal surfaces and LT_0 for the mamelon structure.

Application of Creamy Enamel near the central part of the crown and the marginal ridges on the lingual side.

Application of LT_1 over the entire crown except the incisal area and LT_1 or LT Yellow for the area near the lingual fossa.

Application of Clear Cervical CCV-1 or CCV-2 near the cervical area.

After building-up with Luster or Clear Cervical, bake the restoration according to **Baking Schedule 10**.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
10 *2	7	600	1112	600	1112	45	81	96	920	1688	930	1706	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)
*2 The baking conditions are established on the assumption that 1-3 units are baked. In case of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C(1696°F), high temperature 935°C(1715°F). In case of over 7 units, the dry-out time should be 15 min, release vacuum 930°C(1706°F), high temperature 940°C(1724°F).

Clear Cervical

Use Clear Cervical to reproduce internal coloration resembling the natural tooth without negatively affecting the chroma.

Shade	How to Use
CCV-1	Used for the cervical area, to reproduce brighter shades (A1 to A3)
CCV-2	Used for the cervical area, to reproduce darker shades (A3.5 to A4)
CCV-3	Used for the cervical area, in cases where the root is exposed or the crown is long
CCV-4	1. When more red is required than can be reproduced by CCV-3. 2. Used for deep fossa on the lingual sides of anterior teeth

Speed Enamel

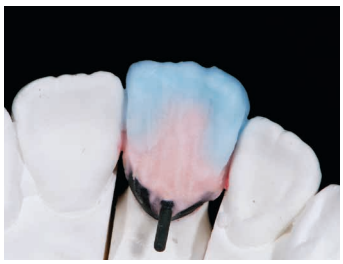
Speed Enamel is a newly developed porcelain specifically designed for the two-layer build-up technique. As compared with conventional enamel, Speed Enamel has a beautiful opalescent effect. An esthetic restoration can be easily created with a simplified build-up technique. It is suitable for both boutique esthetic work and mass-production lab settings.
Start your simple and esthetic work with Speed Enamel NOW!

Clinical Case Application

Correct finish after Paste Opaque or Universal Paste Opaque applications and baking.

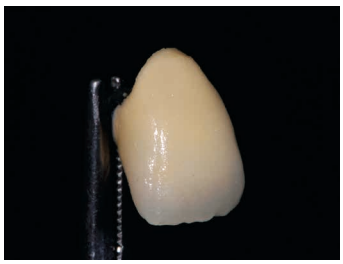
Cut-back the ligual and proximal line angles.

Apply Body to full contour dimensions.



Apply Speed Enamel to these lingual cut-back areas.

Cut-back incisal edge, proximal contacts, and bevel incisal ½ of crown. Define Mamelon structure.



After the restoration according to **Baking Schedule 8** and morphological correction.

Continue applying Speed Enamel to cover ½ of the crown surface.

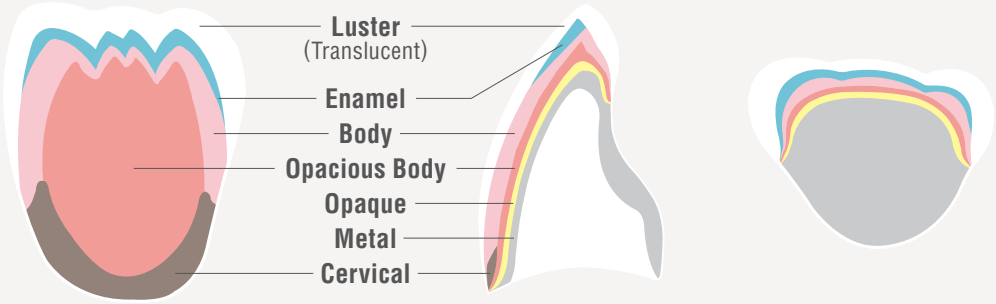
Finished crown made simply!

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
8 *2	7	600	1112	600	1112	45	81	96	920	1688	930	1706	-	-	0

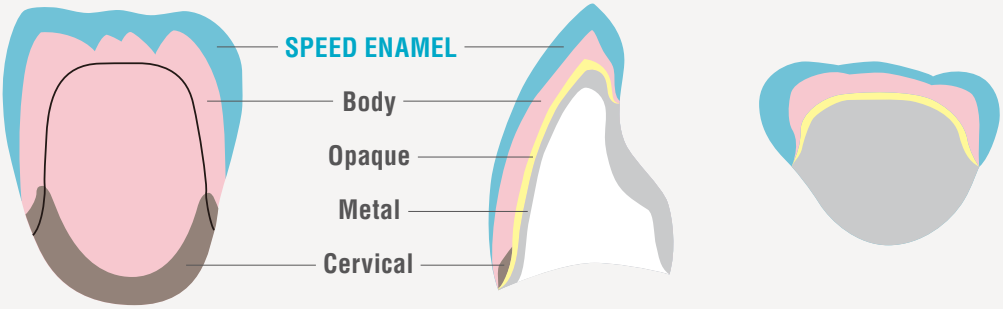
*1 96kPa = 72cmHg (29 inchesHg)
*2 The baking conditions are established on the assumption that 1-3 units are baked. In case of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C(1696°F), high temperature 935°C(1715°F). In case of over 7 units, the dry-out time should be 15 min, release vacuum 930°C(1706°F), high temperature 940°C(1724°F).

Layering Sketch

3 BASIC LAYER BUILD-UP



2 LAYER BUILD-UP with SPEED ENAMEL



Tissue

Tissue comes in 7 shades total. These can also be used to reproduce gingival color on implants.

Shade	How to Use
Tissue 1	Reproduce general gingival color.
Tissue 2	Reproduce light gingival color.
Tissue 3	Reproduce dark gingival color.
Tissue 4	Mix with Tissue 1, 2 or 3 to enhance brightness. Suitable for adjustment of brightness in cases when the space of the gingiva is wide.
Tissue 5	Used for areas where a opacious red tone is required.
Tissue 6	Used to reproduce bright pink.
Tissue 7	Used for areas where a strong red tone is required.

Use Paste Opaque Modifier PO Pink, Opaque Modifier OM Pink or Universal Paste Opaque Modifier UP Pink on a substrate that forms the gingival area. Use Internal Stain and External Stain, as necessary.

Addmate

Addmate is a porcelain used for making corrections. It is used for post-ceramic solder correction, fine adjustment of the morphology after glazing, and correction of problems such as air bubbles or cracks.

Attention

Addmate is a low-temperature baking porcelain.

The following precautions must be taken to avoid problems, such as blackening or whitening of the porcelain.

① Use Addmate Forming Liquid when mixing.

② Use Noritake Magic Separator for separating any porcelain-fused-to-metal from the gypsum die.

③ If tissue paper fibers get mixed with the porcelain slurry during water absorption in the condensation procedure, these fibers will not completely burn-off.
After drying, make sure that no residual tissue fiber remains.

④ Porcelain furnace temperature variations may be significant in the lower ranges (700°C (1292°F) or lower).
Determine the exact baking schedule by performing a trial bake.

Attention

Other precautions

① If there is concern that a post-ceramic soldered area may be deformed because its melting point is lower than that of the post-ceramic soldering material, secure the soldered crowns with a soldering investment before baking. (Use caution to prevent the porcelain from contacting the investment.)

② When making any correction to areas near a post-ceramic soldered area, thoroughly remove any flux, etc., before layering on the porcelain and baking.

③ Do not layer Addmate on the solder; otherwise, cracks might occur.

④ Do not use other porcelain except for Addmate after baking Addmate.

Shade table

Select the right shade of Addmate to suit the restoration shade.

Restoration shades	Addmate shades
A1O・A2O・A3O・B2O	Light Opaque
A3.5O・B3O・B4O	Dark Opaque
A1B・A2B・A3B・B2B	Light Body
A3.5B・A4B・B3B・B4B	Dark Body
All Enamel shades	Enamel
All Translucent shades	Translucent
LT0	Luster Translucent

*For restoration shades other than those listed in the table, select the appropriate Addmate shades that suit them best.

How to use

Use Addmate for the following applications.

Application	Method
Morphological correction after finishing	1. Layer on an appropriate Addmate shade in areas where the porcelain is insufficient. Bake the restoration according to **Baking Schedule 19**. *Do not use Addmate to correct a large area.
Correction of areas contaminated by dust particles	1. Remove dust particles lodged in the porcelain, often appearing as black spots, with a carbide bur. Clean the contaminated area using alumina sandblasted at 0.15 MPa (22 PSI or 1.5 bar). 2. After steaming or ultrasonic cleansing, build-up with Addmate in a shade that is compatible with the corrected area. Then, Bake the restoration according to **Baking Schedule 19**.
Correction of air bubbles	1. When correcting pinholes, use a tapered instrument to compact Addmate into the pinholes. Slightly overfill to take account of shrinkage due to baking. Bake the restoration according to **Baking Schedule 19**. 2. a. When correcting a covered air bubble, grind the area around the bubble, using a carborundum point to widen the pit. It is advisable to widen the pit in the longitudinal direction near the incisal / cusp edges, and in the mesial and distal directions near the cervical area. b. Sandblast the metal at the bottom of the pit and areas around it using alumina at 0.15 MPa (22 PSI or 1.5 bar). c. Apply Light Opaque or Dark Opaque into the pit. Before the porcelain dries, build up with Light Body or Dark Body. Bake the restoration according to **Baking Schedule 19**. Note that the porcelains should be overbuilt, to account for possible shrinkage due to baking.
Correction of cracks	1. Mix Addmate with slightly more Addmate Forming Liquid than usual. Apply a single layer of the mixture to the area where the crack occurs. 2. Make repeated condensation. 3. Bake the restoration at a temperature that is a maximum of 40°C(72°F) lower than the normal glaze baking temperature. For example, if your normal glaze baking temperature is 930°C(1706°F), bake at 890°C(1634°F). *Correcting cracks might be difficult if they occurred due to differences in thermal expansion between the metal and the porcelain. *After post-ceramic soldering, the soldered crowns needs to be secured with an investment.
Correction of porcelain that has become detached from the metal	1. Grind the porcelain around any exposed metal in a gradient. 2. Alumina sandblast the exposed metal at 0.15 MPa (22 PSI or 1.5 bar). 3. Apply a single layer of Addmate Light Opaque or Dark Opaque and bake the restoration according to **Baking Schedule 16**. 4. Build-up with Addmate Light Opaque or Dark Opaque at the same thickness as the surrounding Opaque Porcelain. Before this applied Opaque Porcelain dries, apply another layer of Addmate in a shade that is compatible with the Body Porcelain. Overbuild to account for possible shrinkage due to baking. 5. Bake the restoration according to **Baking Schedule 19**.
Correction of margin areas	1. Apply Magic Separator on the working model and fit the crown to be corrected onto the model. 2. Mix Light Body or Dark Body with Light Opaque or Dark Opaque in a ratio of 10 : 1 and apply the mixture on the area to be corrected. 3. Remove the crown from the working model carefully. Bake the restoration according to **Baking Schedule 18**. *Adjust the baking schedule to suppress the development of gloss.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa*1	°C	°F	°C	°F	min.	min.	min.
16	5	450	842	450	842	45	81	96	700	1292	700	1292	1	-	0
18	5	450	842	450	842	45	81	96	670	1238	680	1256	-	-	0
19	5	450	842	450	842	45	81	96	690	1274	700	1292	-	-	0

*1 96kPa = 72cmHg (29 inchesHg)

Color Combination Table

	A_1	A_2	A_3	$A_{3.5}$	A_4	B_1	B_2	B_3	B_4	C_1	C_2
Paste Opaque	POA_1	POA_2	POA_3	$POA_{3.5}$	POA_4	POB_1	POB_2	POB_3	POB_4	POC_1	POC_2
	$POnA_1$	$POnA_2$	$POnA_3$	$POnA_{3.5}$	$POnA_4$	$POnB_1$	$POnB_2$	$POnB_3$	$POnB_4$	$POnC_1$	$POnC_2$
Universal Paste Opaque	$UPnA_1$	$UPnA_2$	$UPnA_3$	$UPnA_{3.5}$	$UPnA_4$	$UPnB_1$	$UPnB_2$	$UPnB_3$	$UPnB_4$	$UPnC_1$	$UPnC_2$
Powder Opaque	A_1O	A_2O	A_3O	$A_{3.5}O$	A_4O	B_1O	B_2O	B_3O	B_4O	C_1O	C_2O
	nA_1O	nA_2O	nA_3O	$nA_{3.5}O$	nA_4O	nB_1O	nB_2O	nB_3O	nB_4O	nC_1O	nC_2O
Margin	MA_1	MA_2	MA_3	$MA_{3.5}$	MA_4	MB_1	MB_2	MB_3	MB_4	MC_2+ MDL (1 : 1)	MC_2
Opacious Body	OBA_1	OBA_2	OBA_3	$OBA_{3.5}$	OBA_4	OBB_1	OBB_2	OBB_3	OBB_4	OBC_1	OBC_2
Cervical (+Body)	-	CV-1 + A_2B (1 : 2)	CV-1 + A_3B (1 : 1)	CV-1 + $A_{3.5}B$ (1 : 1)	CV-1	-	CV-2 + B_2B (1 : 2)	CV-2 + B_3B (1 : 1)	CV-2	-	CV-3 + C_2B (1 : 2)
Body	A_1B	A_2B	A_3B	$A_{3.5}B$	A_4B	B_1B	B_2B	B_3B	B_4B	C_1B	C_2B
	nA_1B	nA_2B	nA_3B	$nA_{3.5}B$	nA_4B	nB_1B	nB_2B	nB_3B	nB_4B	nC_1B	nC_2B
Enamel	E_2		E_3			E_1	E_2	E_3		E_2	
Speed Enamel	S_2	S_3			S_4	S_1	S_3		S_4	S_3	
Translucent / Luster	T_1 / LT_1										

*1 Please use Silky E1 for 2 layer build-up *2 Please use Silky E2 for 2 layer build-up

Color Combination Table

Converting VITA™ 3D-Master™ Shades to Noritake Value Shades

VITA™ 3D-Master™ Shade	0M1	0M2	0M3	1M1	1M2	2L1.5	2L2.5	2M1	2M2	2M3	2R1.5	2R2.5	3L1.5
Noritake Value Shade	-	-	-	NV1110	NV1120	NV2015	NV2025	NV2110	NV2120	NV2130	NV2215	NV2225	NV3015
Universal Paste Opaque / Paste Opaque	$UPNW_0$/ $PONW_0$	$UPNW_0$/ $PONW_0$	$UPNW_{0.5}$/ $PONW_{0.5}$	$UPNW_{0.5}$/ $PONW_{0.5}$	$UPnB_1$/ $POnB_1$	$UPnB_2$/ $POnB_2$	$UPnB_2$/ $POnB_2$	$UPnB_1$/ $POnB_1$	$UPnB_2$/ $POnB_2$	$UPnB_2$/ $POnB_2$	$UPnA_1$/ $POnA_1$	$UPnA_2$/ $POnA_2$	$UPnC_2$/ $POnC_2$
Margin	MNW_0	$MNW_{0.5}$	$MNW_{0.5}$	MA_1	MA_1	MB_2	MB_2+ MD_4 (1 : 1)	MC_1	MB_2	MB_3	MA_2	MA_2	MC_2
Body	NW_0B	$NW_{0.5}B$	$NW_{0.5}B$	1110B	1120B	2015B	2025B	2110B	2120B	2130B	2215B	2225B	3015B
Opacious Body	-	-	-	OB1110	OB1120	OB2015	OB2025	OB2110	OB2120	OB2130	OB2215	OB2225	OB3015
Enamel	Silky E_2			E_1									
Translucent / Luster													

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C3	C4	D2	D3	D4	NP1.5	NP2.5
POC3	POC4	POD2	POD3	POD4	PONP1.5	PONP2.5
POnC3	POnC4	POnD2	POnD3	POnD4		
UPnC3	UPnC4	UPnD2	UPnD3	UPnD4	UPNP1.5	UPNP2.5
C3O	C4O	D2O	D3O	D4O	NP1.5O	NP2.5O
nC3O	nC4O	nD2O	nD3O	nD4O		
MC4+ MDL (1:1)	MC4	MD3+ MDL (1:1)	MD3	MD4	MNP1.5	MNP2.5
OBC3	OBC4	OBD2	OBD3	OBD4	OBNP1.5	OBNP2.5
CV-3+ C3B (1:1)	CV-3	CV-4+ D2B (1:2)	CV-4+ D3B (1:1)	CV-4	-	CV-1+ NP2.5B (1:2)
C3B	C4B	D2B	D3B	D4B	NP1.5B	NP2.5B
nC3B	nC4B	nD2B	nD3B	nD4B		
E3		E2	E3		E2	
	S4	S3		S4	S2	S3

EW00	EW0	EW	EWY	NW0	NW0.5
POEW0		POEW		PONW0	PONW0.5
UPEW0		UPEW		UPNW0	UPNW0.5
EW0O		EWO		NW0O	NW0.5O
MDL		MNW0+ MDL (1:1)	MNW0+ MDL (2:1)	MNW0	MNW0.5
-		-		-	
-		-		-	
EW00B	EW0B	EWB	EWYB	NW0B	NW0.5B
Silky E1		Silky E2			
- *1		- *2		S1	
ELT2		ELT1		T1 / LT1	

3L2.5	3M1	3M2	3M3	3R1.5	3R2.5	4L1.5	4L2.5	4M1	4M2	4M3	4R1.5	4R2.5	5M1	5M2	5M3
NV3025	NV3110	NV3120	NV3130	NV3215	NV3225	NV4015	NV4025	NV4110	NV4120	NV4130	NV4215	NV4225	NV5110	NV5120	NV5130
UPnB3/ POnB3	UPnC1/ POnC1	UPnB3/ POnB3	UPnB3/ POnB3	UPnD3/ POnD3	UPnA3/ POnA3	UPnC2/ POnC2	UPnB3/ POnB3	UPnC2/ POnC2	UPnB3/ POnB3	UPnB4/ POnB4	UPnA2/ POnA2	UPnB4/ POnB4	UPnA4/ POnA4	UPnA4/ POnA4	UPnA4/ POnA4
MB3+ MD4 (1:1)	MC2	MB3	MB4	MA3+ MC2 (1:1)	MA3+ MC2 (1:1)	MA4+ MC2 (1:1)	MA4+ MB3 (1:1)	MC2	MA4	MA4	MD3+ MC2 (1:1)	MA4	MA4	MA4	MA4
3025B	3110B	3120B	3130B	3215B	3225B	4015B	4025B	4110B	4120B	4130B	4215B	4225B	5110B	5120B	5130B
OB3025	OB3110	OB3120	OB3130	OB3215	OB3225	OB4015	OB4025	OB4110	OB4120	OB4130	OB4215	OB4225	OB5110	OB5120	OB5130
E2															
T1 / LT1															

Baking Schedule

Baking Schedule	Porcelain Type	Dry-Out Time	Predrying Temperature		Start
		min.	°C	°F	°C
1	**Paste Opaque** (including NP Bonder)	8	500	932	500
2	**POBA**	8	500	932	500
3	**Universal Paste Opaque** (High Noble, Noble, Ni-Cr with Be alloys)	8	400	752	400
4	**Universal Paste Opaque** (Ni-Cr without Be, Co-Cr alloys)	8	400	752	400
5	**Powder Opaque First**	3	650	1202	650
6	**Powder Opaque Second**	5	650	1202	650
7	**Margin** *2	5	650	1202	650
8	**Cervical, Opacious Body, Body, Enamel, Speed Enamel, Mamelon, Modifier** *4	7	600	1112	600
9	**Internal Stain**	3	650	1202	-
10	**Translucent, Luster, Clear Cervical, Tissue** *4	7	600	1112	600
11	**Additional application** *3	7	600	1112	600
12	**Self-Glaze** *4	5	650	1202	-
13	**External Stain** (including Glaze)	5	650	1202	-
14	**Margin MRP** *2	5	650	1202	-
15	**Add-on**	5	650	1202	-
16	**Addmate** (wash baking)	5	450	842	450
17	**Addmate** (correction after post-ceramic soldering)	5	450	842	450
18	**Addmate** (correction of margins)	5	450	842	450
19	**Addmate** (for development of gloss in baking)	5	450	842	450

Attention **The above program is only a guideline. Baking temperature may vary due to different furnace.**

*1 96 kPa = 72 cmHg (29 inchesHg)

*2 When Magic Former is used, the dry-out time should be 7 min, pre-drying temperature 700°C (1292°F), and the start vacuum temperature 700°C (1292°F).

*3 This is the baking temperature for cases when Opacious Body, Body, Cervical, Clear Cervical, Enamel, Speed Enamel, Translucent, Luster, Mamelon, Modifier and Tissue are applied additionally.

*4 **The baking conditions are established on the assumption that 1-3 units are baked.**
In cases of 4-6 units, the dry-out time should be 10 min, release vacuum 925°C (1696°F), high temperature 935°C (1715°F).
In cases of over 7 units, the dry-out time should be 15 min, release vacuum 930°C (1706°F), high temperature 940°C (1724°F).

Vacuum	Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold Time		Cool Time
								with vacuum	in the air	
°F	°C / min.	°F / min.	kPa *1	°C	°F	°C	°F	min.		min.
932	65	117	96	980	1796	980	1796	-	1	0
932	65	117	96	1000	1832	1000	1832	1	-	0
752	65	117	96	980	1796	980	1796	-	1	0
752	65	117	96	1000	1832	1000	1832	-	1	0
1202	55	99	96	950	1742	960	1760	-	-	0
1202	55	99	96	950	1742	960	1760	-	-	0
1202	55	99	96	935	1715	945	1733	-	-	0
1112	45	81	96	920	1688	930	1706	-	-	0
-	55	99	0	-	-	830	1526	-	-	0
1112	45	81	96	920	1688	930	1706	-	-	0
1112	45	81	96	910	1670	920	1688	-	-	0
-	50	90	0	-	-	930	1706	-	-	0
-	50	90	0	-	-	910	1670	-	-	0
-	55	99	0	-	-	850	1562	-	-	0
-	55	99	0	-	-	880	1616	-	-	0
842	45	81	96	700	1292	700	1292	1	-	0
842	40	72	96	660	1220	660	1220	1 – 2	-	0
842	45	81	96	670	1238	680	1256	-	-	0
842	45	81	96	690	1274	700	1292	-	-	0

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- Before using this product, be sure to read the Instructions for Use supplied with the product.
- The specifications and appearance of the product are subject to change without notice.
- Printed color can be slightly different from actual color.
- Read the IFU (Instructions For Use) before procedure.

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