



VINTAGE



Universal

Low fusing Stains and Glazes
Advanced Product Information

SHOFU INC.

Contents

Thank you for purchasing our VINTAGE Art Universal Porcelain Stains. Please read these advanced product information carefully before use to maximally benefit from this product.

Kindly keep this document for your future reference.

VINTAGE Art Universal low fusing fluorescent Stains and Glazes are designed for internal and external modifications of the shades of all existing ceramic materials. They can be applied to all low fusing ceramic materials, monolithic and veneered zirconia, pressable ceramic frames, PFM and artificial porcelain teeth. In a very simple way, they allow users to reproduce any natural tooth characteristics with a vital appearance.

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1. Notes on Use

1-1 Notes

- 1 Tightly close the cap immediately after each use.
- 2 Dispense the necessary amounts of VINTAGE Art Universal Powder and Liquids. Do not put the remaining material back into the container.
- 3 Do not touch the material with bare hands.
- 4 Use the dispensed materials immediately after dispensing.
- 5 Firing conditions may vary depending on the design and operating voltage of the porcelain furnace used. It is essential to carry out test firings before firing actual restorations.
- 6 Do not use any liquid other than VINTAGE Art Universal LIQUID and YAMAMOTO LIQUID.
- 7 Do not mix with any other products or water.
- 8 Use a glass or ceramic mixing palette since this material might soften plastics.

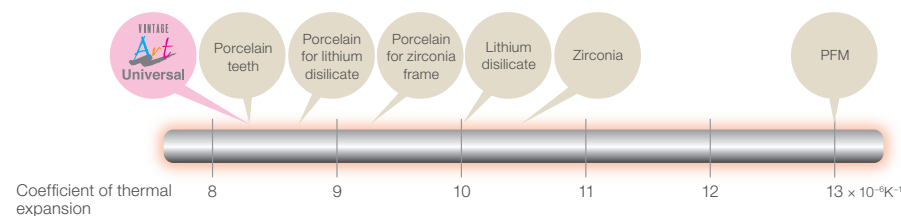
1-2 Important Notes

- 1 If inflammation or other allergic reactions occur, immediately discontinue use and seek medical advice.
- 2 Wear protective glasses etc. while grinding and polishing this product to avoid any damage to the eyes.
- 3 Use local dust extractor, dust protective mask, etc. while grinding this product to avoid any harmful influence of the dust on the human body.
- 4 Avoid contact with intraoral tissue, skin and eyes. In case of accidental contact with skin, immediately rinse with plenty of water. In case of contact with eyes, immediately flush with plenty of water and seek medical advice.
- 5 Avoid any source of ignition since VINTAGE Art Universal LIQUID and VINTAGE Art Universal YAMAMOTO LIQUID are flammable.

2. Characteristics

2-1 Compatible with various dental ceramic materials

VINTAGE Art Universal Porcelain Stains can be used for the internal and external staining of various dental ceramic materials, such as ceramic systems for zirconia or pressable ceramic frames, PFM and artificial porcelain teeth.



2. Characteristics

2-2 Easy-to-use powder stains

VINTAGE Art Universal is a powder-type stain system. The viscosity can be easily adjusted to suit personal preference in each case. The color intensity can also be adjusted by mixing with Glaze Powder (GP: non-fluorescent, GP-F: fluorescent). Mixing with Glaze Powder adds glass particles to the mixture and allows users to apply it evenly and properly, resulting in a 3-dimensional effect and a smooth surface after firing.

2-3 Excellent luster and color intensity

VINTAGE Art Universal uses newly developed low fusing glass and micro-fine pigments derived from new pigment technology. These state-of-the-art technologies allow users to obtain a lustrous surface even with a thin layer without ruining the characterization created with the stain. Thanks to its excellent color intensity, VINTAGE Art Universal offers users a wider variety of options for characterization.

1 Excellent luster



Before glaze firing



After glaze firing

2 Example of staining with VINTAGE Art Universal



Application to monolithic zirconia

2-4 A wide variety of colors and shades are available to meet the requirements of various aesthetic restorations (Stain 27 colors and Glaze 2 colors)

Stains





P Pink		O-Br Orange Brown		B Black	
V Violet		MP Mamelon Pink		G Gray	
DR Deep Red		Mlv Mamelon Ivory		K Khaki	
Y Yellow		LO Light Orange		AS A shade	
LY Light Yellow		DR-Br Dark Red Brown		BS B shade	
Gr Green		Br Brown		CS C shade	
Bl Blue		B-Br Black Brown		DS D shade	
Bl-G Blue Gray		W White		RS R shade	
O Orange		Vn Vanilla		LS Light shade	

Color fidelity is not perfect on the printout.

Base Color Stains Color Stains Shade Stains

2. Characteristics

Glaze * (2 colors)

Color	Under ambient light	Under black light (ultraviolet light)
GP-F Glazing Powder Fluorescent		
GP Glazing Powder		

* Zirconia circle plates applied with each glaze

2-5 Fluorescence

VINTAGE Art Universal Stains and Glazing Powder GP-F match the fluorescence of natural dentition and enhance the vitality of ceramic materials as well as monolithic zirconia.



3. System Components

BASIC COLOR SET

Stains 16 colors/2g each
P, V, Y, Gr, Bl, Bl-G, O, O-Br, DR-Br, W, B, K, AS, BS, CS, DS
Glaze 1 color/15g
GP-F
VINTAGE Art Universal LIQUID 50mL

Refills

Stains

Contents : 2g (Powder)
Colors (27 colors) : P, V, DR, Y, LY, Gr, Bl, Bl-G, O, O-Br, MP, Mlv, LO, DR-Br, Br, B-Br, W, Vn, B, G, K, AS, BS, CS, DS, RS, LS

Glaze

Contents : 15g, 50g (Powder)
Colors (2 types): GP, GP-F
GP: Glaze Powder without fluorescence, to be used when the layered porcelains already have natural fluorescence
GP-F: Highly fluorescent Glaze Powder, preferably for monolithic restorations that are not fluorescent

VINTAGE Art Universal LIQUID

Contents : 50mL
Standard mixing liquid for mixing VINTAGE Art Universal Porcelain Stains

VINTAGE Art Universal YAMAMOTO* LIQUID

(True color mixing liquid)

Contents : 50mL

Mixing liquid with a similar refractive index as the glass.
The mixture with VINTAGE Art Universal Stains and Glazes shows its final color and effect before firing.



Glaze Powder mixed with VINTAGE Art Universal LIQUID



Glaze Powder mixed with VINTAGE Art Universal YAMAMOTO LIQUID (True color mixing liquid)

*Mr. Makoto Yamamoto, the developer of YAMAMOTO LIQUID, is the author of "The Metal-Ceramics" —Principles and Methods of Makoto Yamamoto—and the inventor such as of Opal porcelain and Margin porcelain. He is also SHOFU's senior technical advisor and the designer of all SHOFU porcelains.

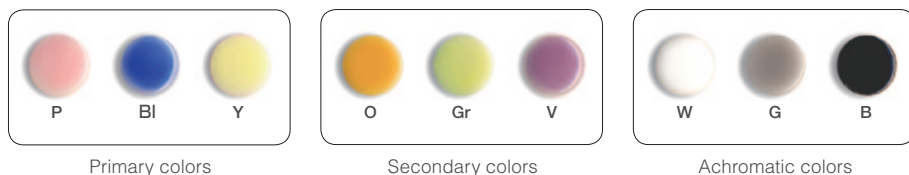
4. Color Concept

The color concept of the VINTAGE Art Universal system is logically structured in three main color groups.



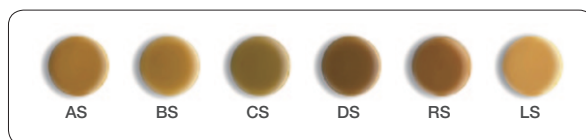
4-1 Base Color Stains

Basic shade adjustment and characterization are performed with these colors.



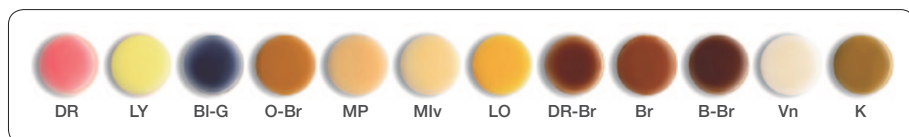
4-2 Shade Stains

The shade intensity of each shade group can be controlled with these materials.



4-3 Color Stains

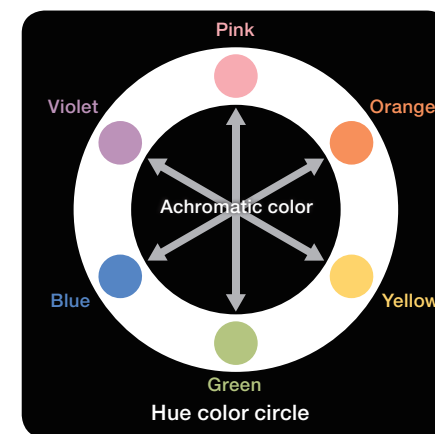
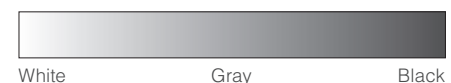
Thanks to this extensive color lineup, the desired shade can be obtained easily without complicated mixing, allowing users to reproduce natural-looking restorations in a large variety of cases.



4-4 Base Color Stains and Hue Color Circle

The Base Color Stains include primary colors, secondary colors and achromatic colors. Base Color Stains are used to adjust shade and brightness of each stain material.

Primary colors <Pink, Blue, Yellow>
Secondary colors <Orange, Green, Violet>
Achromatic colors <White, Gray, Black>



The hue color circle displays the primary colors such as Pink, Yellow and Blue. Between the primary colors, the secondary colors are located. In the center of the hue color circle, there are achromatic colors.

The opposing colors of the hue color circle are called "complementary colors" and neutralize each other. This means that opposing shades turn gray when mixed in equal quantities. This is based on the subtractive color mixing theory.

Mixing stains for shade adjustment is easy, based on this concept. Achromatic colors such as White, Gray and Black can be used for the adjustment of brightness (value).

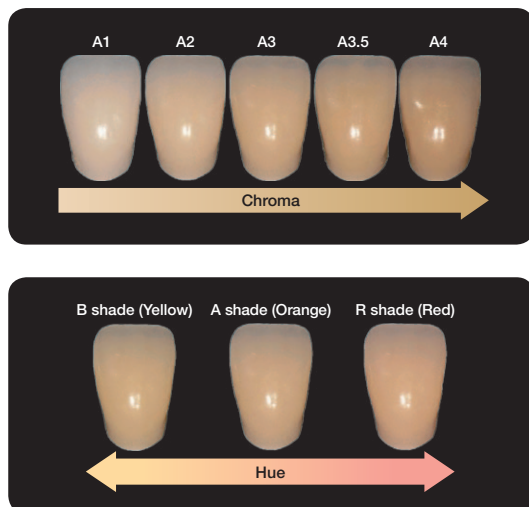
Example: To reduce a greenish tone, the complementary color, Pink, is applied.



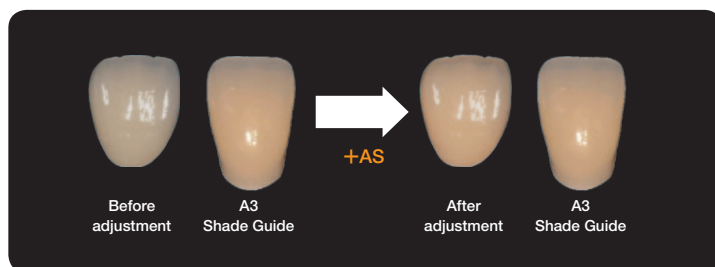
4. Color Concept

4-5 Shade Stains

Shade stains are recommended for adjusting the shades of pre-colored ceramic restorations. They should be applied to the porcelain surface to adjust the chroma and hue of the shade. In addition to the five shades based on the shade guide, AS, BS, CS, DS and RS, a new shade, LS, has been added to the lineup. LS is effective for fine tuning of shades while maintaining the brightness of the whitening shade.



Example: In order to emphasize an A shade, AS (A shade) is applied.



5. Directions for Use

5-1 Cleaning of the restoration

Thoroughly clean the restoration with a steam jet and/or ultrasonic bath.

5-2 Mixing of Universal Stains and Glazes

VINTAGE Art Universal Stains and Glazes can be mixed with VINTAGE Art Universal LIQUID or VINTAGE Art Universal YAMAMOTO LIQUID. When mixing with YAMAMOTO LIQUID, the Universal Stains show their final color effects before firing.

Dispense the desired powder onto a glass plate or stain palette. When mixing the stain powders, use any ratio to obtain the required shade. Add adequate amount of VINTAGE Art Universal LIQUID to the dispensed powder and mix them. The viscosity can be adjusted by mixing with VINTAGE Art Universal LIQUID. The color intensity can also be adjusted by mixing with Glaze Powder (GP: non-fluorescent, GP-F: fluorescent). Mixing with Glaze Powder adds glass particles to the mixture and allows users to apply it evenly.

Example: Adjustment of viscosity



High viscosity



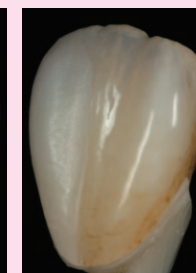
Low viscosity

Example of using YAMAMOTO LIQUID

A 3-dimensional effect can be produced by mixing with YAMAMOTO LIQUID. Thanks to its higher viscosity and exact color, VINTAGE Art Universal Porcelain Stain and fluorescent Glaze create the illusion of spatial depth, especially on monolithic restorations.



3-dimensional staining after firing



With extremely thin layers, the illusion of spatial depth can be created

5. Directions for Use

5-3 Staining

Apply the mixed stains with a thin brush to the dry surface.



5-4 Firing Schedule

Refer to the following firing schedules.

Material	Inner/Outer porcelain staining, Glazing Lithium disilicate	Staining monolithic zirconia
Drying temperature (°C)	400	400
Drying (min.)	6:00 (7:00-8:00 *3)	6:00 (7:00-8:00 *3)
Close (min.)	1:00	1:00
Preheat (min.)	1:00	1:00
Heat rate (°C/min.)	50	50
Firing temperature (°C) *1	730	800
Holding time (min.)	1:00	1:00
Vacuum/Atmosphere *2	Vacuum	Vacuum
Vacuum start (°C)	450	450
Vacuum end (°C)	720	800

*1 VINTAGE Art Universal can be fired at 730 °C or higher temperatures. If surface gloss is insufficient, increase the firing temperature.

*2 Vacuum 1.3 - 8.0kPa / Full vacuum

*3 When using YAMAMOTO LIQUID

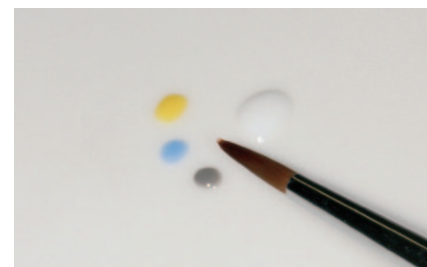
Note:

Firing conditions may vary, depending on the design and operation voltage of the porcelain furnace used. So, test firing is recommended for appropriate firing conditions and results. Stain and Glaze mixtures with YAMAMOTO LIQUID should be pre-dried approx. 1-2 minutes longer than mixtures with VINTAGE Art Universal LIQUID.

6. Usage Examples

6-1 Shade adjustment and glazing

VINTAGE Art Universal Stains are recommended for shade adjustments, while Glazes are used to increase luster. Universal Stains and Glazes can be mixed to perform shade adjustment and glazing simultaneously.



Mix Stain and Glaze



Apply the mixture



Before shade adjustment of monolithic zirconia



After shade adjustment of monolithic zirconia

They can also be used for glazing, shade adjustment and characterization of artificial porcelain teeth after contouring.



Artificial porcelain teeth after contouring



After shade adjustment

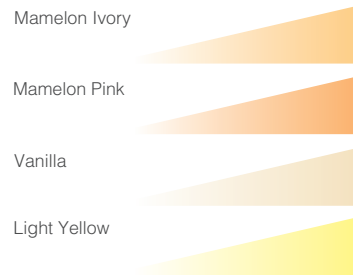
6. Usage Examples

6-2 Various staining techniques

Porcelain, zirconia and pressable ceramics can be stained with VINTAGE Art Universal Stains to obtain the desired shade. They can also be used for foundations of frameworks made of different materials.

6-2-1 Designing of mamelon shapes

To emphasize mamelon structures, Mamelon Ivory, Mamelon Pink, Vanilla or Light Yellow can be applied.



Adjustment of mamelon structure on the foundation of a frame

6-2-2 Adjustment of translucency on the incisal area

To intensify the translucency of the incisal area and adjust the light reflection, Blue, Blue Gray and Violet can be applied.



Adjustment of incisal translucency

6-2-3 Shade adjustment on occlusal surface

To create an individual occlusal surface, Orange, Light Orange, Orange Brown or Brown can be applied thinly to the center of the occlusal area. Dark Red Brown or Black Brown can be placed in the fissure using a small brush.

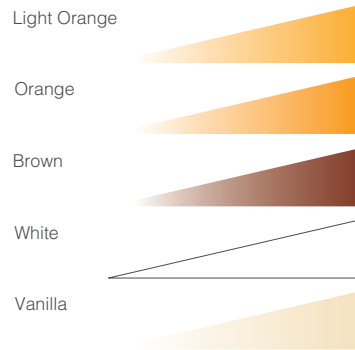


Shade adjustment on occlusal surface

6. Usage Examples

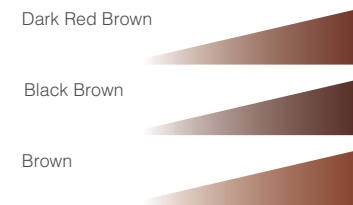
6-2-4 Application of white bands and decalcifications

To create white or bright bands or decalcification areas, Light Orange, Orange or Brown can be mixed with White or Vanilla.



6-2-5 Application of hair lines and crack lines

For creating hair lines, Dark Red Brown, Black Brown or Brown are recommended. Crack lines can also be created using White or Vanilla.

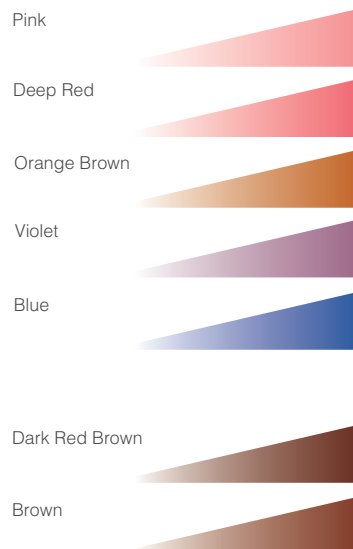


6. Usage Examples

6-2-6 Staining of gingiva

To create individual gum colors, Pink, Deep Red, Orange Brown can be applied. Veins can be reproduced with Violet or Blue.

Dark Red Brown or Brown is used to create melanin discolorations or emphasize the gingival sulcus.



Adjustment of gum color



Melanin discoloration and emphasized gingival sulcus

7. Troubleshooting

	Trouble	Cause	Solution	Note
Glazing	No luster	Too much liquid	Reduce the amount of liquid	Mix powder and liquid in a ratio of 1g : 1.25g
		Firing temperature is too low	Raise the firing temperature	Firing temperature needs to be changed depending on the material and size of the restoration
Glazing and staining	White discoloration	GP-F layer is too thick	Apply thin layer	GP-F imparts sufficient fluorescence even with a thin layer. Apply it thinly
		Vacuum firing has not been performed	Fire in vacuum	Confirm the firing schedule and conditions of porcelain furnace
		When mixing Glaze Powder or Universal Stains with YAMAMOTO LIQUID	Avoid any contamination with water	Don't apply this mixture to wet porcelain or frameworks
Bubbles	Bubbles	Contamination of application surface	Thoroughly clean the surface with ultrasonic or steam cleaner	
		Drying time is too short	Prolong the drying time	Insufficient drying causes boiling of the liquid components remaining in the paste
		Drying temperature is too high	Lower the firing temperature	Residual liquid components must have boiled
		Firing temperature is too high	Lower the firing temperature	Maximum firing temperature is 850°C or lower.
		Firing table or firing tray is too hot	Place the firing tray on the firing table 2-3 minutes after the firing stage comes down	If the restoration stained with VINTAGE Art Universal is placed on the extremely hot firing table, liquid components might boil quickly, causing bubbles. Place the firing tray after the firing table cools down sufficiently enough to avoid boiling the liquid components.