WILLI GELLER

Creation

An explanation of how to apply
the unique powders of
the Creation Porcelain System

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THE CREATION KIT

OPACIOUS DENTINS

THE CREATION KIT contains Opacious Dentins for the sixteen (16) Vita shades A-1 to D-4. Opacious Dentins were developed by Willi Geller to help control areas that are notably dark and shadowed. Opacious Dentins are used to control both the value and the chroma of a crown, and are inherently more opacious to help reduce the amount of light transmitted in the mouth. When too much light is transmitted through a crown, it's value is lowered. Areas that a ceramist may consider using Opacious Dentin to control value and chroma are as follows:

MIDDLE 1/3
The use of a bright Opacious Dentin like OD B-1 underneath a darker shade like B-3 or A-3 will raise the value of the crown.

PALATAL/LINGUAL
The application of Opacious Dentin on the lingual or palatal aspects of a restoration helps to control the light transmission in the incisal one-third. Problems such as "copings show through" or the "headlight" effect can be diminished greatly with a thin layer applied lingually from the cervical of the coping toward the incisal edge of the crown. The thicker the layer applied to the lingual, the more opacious and brighter the incisal will be and vice versa.

INTERPROXIMAL
Applying a high chroma Opacious Dentin to the interproximal provides two benefits: It adds to the warmth and vitality of the interproximal, and it inhibits the transmission of light in the proximal area. Transmission of light in the interproximal will cause the restoration to grey in the mouth and appear too low in value.

CERVICAL
When no porcelain margin is used, a high chroma Opacious Dentin may be used instead to help maintain proper chroma or color saturation. The material may be used to simulate the neck or exposed root of a crown.

DENTINS

THE CREATION Dentin shades, A-1 through D-4, have been manufactured to perfectly match the Vita Shade Guide. Because of the opacity level and chroma of the Creation powders, it is possible to work with a thinner layer of material than is recommended with other brands of dentin powders. This is an advantage when there is minimal reduction on a restoration. When possible, use between 0.5mm and 0.7mm of Dentin. Experience will dictate when and where to modify the thickness.

ENAMELS

THE CREATION KIT comes with four (4) standard enamels: S-57, S-58, S-59, and S-60. These enamels express only value, white to grey. They can be used in various concentrations to achieve different effects.

S-57 — Highest Value (Whitest)
S-58 — High Value
S-59 — Medium Value
S-60 — Lowest Value (Greyest)

Understanding the concept of value offers a choice as to which enamel to use in different situations. For example, S-57 (highest value) can be used on the ridges or cusp tips of a restoration to brighten the area. Another would be to use S-60 (lowest value) on a light shade like A-2, which would create a greyer incisal effect. Experience will tell a ceramist which enamels are appropriate to achieve the desired effect.

CLEAR TRANSLUCENT = CL - O

THIS KIT CONTAINS one clear translucent powder: CL-O. While the use of clear porcelain can add to the beauty of a restoration, it should be used with caution. Clear used on the interproximal area will allow too much light to transmit into the mouth. When used as an overlay or in segments in the incisal area, it can help create a more translucent and vital crown. However, if too much is used, the crown will be lower in value and will not look natural.

MODIFYING TRANSLUCENTS: NT & OT

IN ADDITION TO CL-O, there are two (2) other translucent powders in the Creation system. These can be used individually or in combination with other enamels to achieve various effects.

NT = NEUTRAL TRANSLUCENT
Neutral Translucent is a modifying translucent material. It can be used alone to create a brighter translucent effect. It also can be used with other enamels at different ratios to make the enamels more translucent. For example, 80% of S-58 mixed with 20% of NT will create a bright enamel with increased translucency.

OT = OPALESCENCE TRANSLUCENT
Opal Translucent is a unique material. It has no pigmentation, yet, when used correctly, will create a true opal effect. Opalescence is one phenomenon of light. Generally, we perceive this effect in the incisal area. In simple terms, opalescence is the reflection of the shorter (bluish) wavelengths of light and the transmission of the longer (yellowish/orange) wavelengths. In the mouth, most of what we see is reflected light. Since the blue tones are the colors reflected in opalescence, OT should not be used as an overlay because this could lead to an overall lowering of the value of the crown. A small amount of OT may be used on the mesial and distal incisal edges to create vitality.

GLAZE POWDER -GL

THE KIT CONTAINS one bottle of Glaze Powder. To achieve the ultimate result during the glaze bake, it is recommended that the restoration be given a low natural glaze. It should then be polished with pumice and a felt wheel. Brass polish may be added to increase the luster and translucency. However, there are times when a surface glaze powder can be used. Using the Glaze Powder as a carrying agent mixed with stains will allow the stains to fuse slightly below the finished surface of the crown. This will prevent the stains from wearing off during polishing. Mixing the Glaze Powder with Dentin or Enamel will also reduce the temperature at which these powders fire. Using 5% to 15% of Glaze Powder should reduce the overall temperature enough to allow for fusion of an add-on. During glaze, for example, adding onto a contact can be achieved by mixing 10% Glaze Powder to Enamel S-59 to create an add-on mixture.

SURPRISE KIT

THE CREATION SURPRISE KIT contains different effect powders to help the ceramist achieve a much higher level of aesthetics. Surprise provides the ceramist the tools necessary to fabricate restorations that simulate nature.

OD = OPACIOUS DENTINS

THE SURPRISE KIT has four additional Opacious Dentins. They are OD-32, OD-37, OD-41, and OD-43. These are similar to the Opacious Dentins found in the basic Creation kit. These shades are used to create different modifications in specific areas.

OD-32 A beautiful color that can be used in the interproximal region to stop light transmission and to create a feeling of warmth.

OD-37 A color with warm-yellow tones. It works well on the palatal side of restorations to create the feeling of vitality without being too strong or too dark.

OD-41 The color is a darker and more intense shade. It can be used for the cervical area to simulate exposed roots.

OD-43 The color is bright ivory. It is best used in areas where high value needs to be achieved. For example, it can be used in the middle third of a crown to brighten or raise its value. This series of Opacious Dentins can be used instead of, or mixed with the other assortment of Opacious Dentins found in the Creation Kit to develop different effects from deep within the crown.

ZF = TISSUE COLORED PORCELAIN

THE SURPRISE KIT contains two (2) porcelain powders to help simulate healthy gingiva:

ZF-02 LIGHT PINK

ZF-03 DARK

The powders may be used in periodontal cases where there is bone and tissue loss. They may also be used on implant frameworks to more naturally simulate healthy dentition.

HT = NECK TRANSLUCENT

THE NECK TRANSLUCENT powders can be used in the cervical area as well as in other areas of a restoration. The name "Neck Translucent," is derived from the rich translucent color we often see in the neck area of the natural teeth. They can create subtle nuances of color depending upon where they are placed in the build-up.

HT-51 IRIDESCENT This might be used to brighten the mesial or distal line angles of an anterior tooth. It displays a soft-white effect.

HT-52 KHAKI This powder may be used straight in the incisal of an anterior build-up or as a wash on the occlusal table.

HT-53 SAND This color works well on the occlusal or in the incisal – straight or mixed with Enamel.

HT-54 HONEY For darker shades, this color may be mixed with Enamel, and used in the incisal, cervical, or occlusal aspects of a build up.

HT-55 BORDEAUX This color is perfect on darker shades in the occlusal area. It is intense and effective when mixed with another HT like HT-53.

These are just some areas that the Neck Translucent can be used…. practice and experience are the best teachers. Do not limit yourself. The Neck Translucent powders work well straight, or mixed with Dentin or Enamel powders. Remember, the sintering temperature of the HT's is lower than that of the Dentin and Enamel.

MI = MAKE IN POWDERS

MAKE-IN POWDERS were developed primarily to create mamelon effects in the incisal area of anterior teeth. The Make-Ins consist of six (6) different shades.

MI-61 IVORY
MI-62 LEMON
MI-63 HONEY-YELLOW
MI-64 FLAMINGO
MI-65 GOLD
MI-66 OLIVE

These powders are high in opacity and high in chroma. Therefore, it is best to dilute the Make-Ins with Dentin at a ratio of one to one (1:1). Mix the Make-In powder with the Universal Liquid to more easily perceive the color and intensity during application. A very thin wash underneath the Enamel layer will create the desired effect. If the mamelon is too strong, use less of the mixture or dilute it with more Dentin. The modifier In Nova can also be mixed with the Make-In to enhance the vibrancy of the mamelons.

SI/TI = MODIFIED ENAMELS AND TRANSLUCENTS

SIs

THE SI/TI INCISAL POWDERS have been developed to broaden a ceramist's ability to match the different shades of enamel in the mouth. These unique powders have opalescent characteristics and are more vital looking in the mouth than the standard Enamels found in the basic Creation kit. They can be used straight or mixed with the basic Enamels to create all the subtle variations we see in teeth. The powders are divided into two basic groups: SI or Incisal, and TI or Translucent. Powders in the SI family are similar to the basic Enamels in their opacity level (the ability to reflect light). There are six (6) different SIs. Each has a certain level of color. The hue expressed in the SI enamels is a warm tone of yellow/orange. The SIs remain constant in their opacity, but increase in chroma as the number increases.

SI-01 (Less chroma. The highest value or brightest of the SIs.)
SI-02
SI-03 (Medium chroma. Medium value expressed.)
SI-04
SI-05
SI-06 (High chroma. The lowest value or greyest of the SIs.)

Remember, as the chroma increases, the value decreases. You may choose to use a bright SI-01 on a ridge or cusp tip to create a bright area and one that also has some warmth or vitality. To contrast, SI-06 might be used on an older person's occlusal surface to more naturally simulate the dark surrounding enamel.

TIs

THERE ARE FOUR (4) MORE enamels available called TIs. The TI enamels differ from the SIs in two distinct ways. First, TIs are translucent and allow more light to transmit through the crown. Second, unlike the SIs, which basically have the same hue, each TI has its own respective color.

TI-1 Translucent Blue
TI-2 Translucent White
TI-3 Translucent Pink
TI-4 Translucent Yellow

Translucent Enamels can be used straight or mixed with other enamels to achieve an aesthetically pleasing result.

TI-1 is used at the mesial and distal incisal edges of an anterior restoration to create a soft translucent blue effect (opalescence) often seen in natural dentition.

TI-2 may be used to highlight cusp tips or ridges in the posterior to give the bright "frosted" look sometimes seen in teeth. It also works to highlight the mesial and distal line angles of an anterior tooth. Generally, it is best to put a thin layer of TI-2 between the Dentin and Enamel to achieve a more subtle effect.

TI-3, with its soft translucent pink color, works well. It creates a nice effect when used at the cervical area to help create the reddish tones often seen in younger patients' teeth. Its unique coloring helps blend the crown with the tissue.

TI-4 is a beautiful color that works well in almost any restoration. Used straight on the lingual aspect of posterior teeth, it creates a warm translucent color, making the crown come alive in the mouth. When mixed with CL-O, it makes an excellent overlay powder to cover enamel or the labial surface of an anterior crown. This one powder can be used almost universally throughout any build-up.

SP = SHOULDER PORCELAIN

THE CREATION SHOULDER PORCELAIN has a unique fiber optic ability that helps transmit the light around the circumference of a crown. This is an area of great importance to the aesthetic success of the crown. This fiber optic effect, along with the inherent fluorescence of the shoulder powders, sets it apart from the other shoulder materials. There are nine (9) different Shoulder Porcelains, including a Shoulder Porcelain Conversion Chart that's used to achieve the different Vita Shades. This makes it easy to customize a patient's shades.

TRANSLUCENT SHOULDER SHADES

SP-21	Neutral
SP-22	Flamingo
SP-23	Sand
SP-24	Gold
SP-25	Brown Red
SP-26	Yellow Grey

OPACIOUS SHOULDER SHADES

SP-27	Ivory
SP-28	Opaque Yellow
SP-29	Honey

The Creation shoulder material differs from other systems due to its two layer system. At times, when fabricating a porcelain margin, a distinct line will be evident at the metal junction. This often happens when the shoulder material is too translucent. To overcome this, the first layer is built with the opacious shoulder shades. The opacious shades are necessary for reflecting light to provide value to the shoulder instead of passing the light through to be lost in the underlying tooth. This layer forms a gradual transition of opacity from the coping to the natural tooth, and so prevents the appearance of the metal junction.

The second layer is built with the translucent shoulder shades. This layer will provide the translucency necessary to create the appearance of depth and will also blend smoothly into the shade of the natural. The combination of opacious shoulder

shade with the translucent shade can be chosen to give a wide range of choices for custom shades or standard Vita shades according to the Shoulder Porcelain Conversion Chart.

FINAL MARGIN CORRECTION

After repeated firing of the Shoulder Porcelain material there will be some shrinkage at the margin. This can be corrected at the second dentin bake, and again at the glaze bake to achieve an excellent fit. Because the shoulder powders mature at a higher temperature than these two bakes, it is necessary to work with a powder that has a lower firing temperature at this point. By using 70% of the Neck Translucent (HT), which has a lower maturation temperature than the Dentin, and mixing it with 30% of the Shoulder Porcelain, one now has a material that will fire correctly. Applying this material very wet allows it to flow into the areas around the margin that need to be filled. After removing the excess moisture, the crown can then be removed from the die and add-ons completed as necessary. Fire at the recommended correction or glaze temperature.

MAKE UP KIT

THE "MAKE UP" KIT IS A STAIN KIT consisting of nineteen (19) different kinds of stains. Two (2) bottles of Glaze Powder, one (1) bottle of Illusion Powder, one (1) bottle of Crack Liner, one (1) stain brush, one (1) bottle of Make Up Liquid, and one (1) shade guide. The stains themselves are divided into two (2) types: MU/L and MU/M.

MU/M = MAKE UP "INTENSE"

THERE ARE SIX (6) different MU/M "intense" shades.

MU/M-91	Red	**MU/M-92**	Yellow	**MU/M-93**	Honey
MU/M-94	Brown	**MU/M-95**	Dark Brown	**MU/M-96**	Brown Grey

These stains were developed as a surface stain to simulate tartar or plaque, and should not be used internally. Because of their grain size after firing, they should not be used at or near the gingival margin.

MU/L = MAKE UP "WATERCOLOR"

THERE ARE THIRTEEN (13) different MU/L "watercolor" shades.

MU/L-71 White
MU/L-72 Light Yellow
MU/L-73 Orange
MU/L-74 Ochre
MU/L-75 Medium Brown
MU/L-76 Red Brown
MU/L-77 Khaki
MU/L-78 Olive
MU/L-79 Grey
MU/L-80 Pink
MU/L-81 Lilac
MU/L-82 Blue
MU/L-83 Black

These MU/L stains are less intense than the MU/M stains. Because of the grain size and subtle colors, these are ideal for use both internally to modify during build-up, and externally for shade adjustments before the glaze bake.

I = ILLUSION

IN ADDITION TO THE TINTS found in the Make-Up Kit, there are two (2) additional powders that are unique to the Creation Porcelain System: "Illusion" and "Crack Liner." "Illusion" is not a surface stain, but a modifier that can be used to help lower the value of a restoration. "Illusion" was named because of its ability to create the illusion of depth to help solve the following problem: often, there is insufficient reduction in the incisal one-third of an anterior tooth. This creates a problem, as the coping is not covered enough to hide the opaque fully. The opaque shines through the Dentin and Enamel, raising the value. The use of "Illusion" in this area will reduce the value enough to make the ceramic look translucent.

A strict procedure for the application of "Illusion" is important. First, mix the "Illusion" with the Universal Liquid. By mixing this way, it will be easier to perceive the amount being applied. Apply a very small amount of "Illusion" at the incisal one-third, the area at the top of the coping and toward the incisal. Be careful not to apply too much. You should be able to see a very, faint violet/grey hue. If dark violet is seen, too much is being used. The Illusion is the lowest maturing material in the porcelain system. If too much is applied, it will crack or tear at firing. If used correctly, it can enhance your ability to create restorations with perceived depth.

CR/L = CRACK LINER

"CRACK LINER" IS ANOTHER unique power found in the Make Up Kit. It was developed specifically for creating the appearance of a crack or check line found in a tooth. It should be mixed with the Universal Liquid to a very thin consistency. Application of the Crack Liner is achieved by building a vertical wall of Enamel, perpendicular to the labial surface of the Enamel. It is important that this wall be very wet to prevent the Crack Liner from being drawn in, or absorbed by the enamel. This would result in a washed out crack or a milky stripe in the porcelain after firing. Using the make-up brush, saturate the bristles with the Universal Liquid. Using one side of the flattened brush, draw the brush tip through the Crack Liner. Be careful not to pick up too much; the smaller the amount used, the more subtle the crack will appear. If a darker crack is desired, add a little Make Up stain or IN Nova to the Crack Liner. Another mass of Enamel can be used to "sandwich" in the Crack Liner. The intensity of the crack can be controlled by the choice of Enamels used with the Crack Liner. If a faint check line is desired, use a more opacious enamel like S-59, or SI-04. If a more intense crack is desired then use a more translucent enamel like TI-4, or CL-O.

I-N = IN NOVA

IN NOVA is a unique porcelain modifier. It is more than just a stain or tint. It is a modifier with fluorescence. It is one of the most fluorescent materials in the "CREATION PORCELAIN" system. The IN NOVA Kit consists of ten (10) different shades.

IN 1	Melon	**IN 2**	Rose
IN 3	Gold	**IN 4**	Light Brown
IN 5	Brown	**IN 6**	Olive
IN 7	Grey	**IN 8**	Blue
IN 9	White	**IN 10**	Maize

All porcelains are manufactured from metal oxides. These oxides stop light from transmitting into the porcelain, casting a shadow on everything they cover. IN NOVA solves this problem. Its high level of fluorescence compensates for shadowing. IN NOVA is a very intense, universal modifier that can be used with any of the Creation powders, including the Shoulder Porcelains, Dentins, or Enamels. It should not be used with, or on the opaque layers, since this might result in the framework showing through in high UV light concentrations. It is not a surface stain either, it is for internal use only, and its application depends on the effect needed.

IN NOVA should be mixed with Universal or IN NOVA Liquid to a thick consistency and can be applied straight to the build up, as in the "wet stain" technique. However, this method, while effective, can lead to very intense coloring. At first, it is best to mix a very small amount of the IN NOVA powder to the powder of choice (i.e. Dentin or Enamel). Start with about 5% IN NOVA for subtle coloring. Mix thoroughly and apply to the areas where extra chroma is needed. If the mixture is applied very wet there will be a softer dispersion of color.

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