IPS Ivocolor

Stains and Glazes

Instructions for Use

CE 0123

ivoclar vivadent® technical

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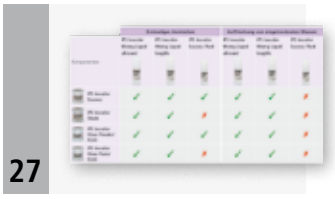


Symbols in the Instructions for Use

Tips & Tricks

Important information

Note on firing

IPS Ivocolor
Product

Product description

IPS Ivocolor is a **universal stains and glaze assortment** for the **individualized staining** and **characterization** of ceramic materials. The range of products has been coordinated with the layering, press and CAD ceramics from Ivoclar Vivadent and the zirconium oxides from Wieland Dental and can be used regardless of the CTE of the ceramic. Due to the optimized sinter temperature of the newly developed glass, optimum esthetic results can be achieved irrespective of the ceramic substrate.

The newly developed composition of the pastes was optimized with regard to the application behaviour and the firing results. The gel-type structure of the pastes can be optimally adjusted to the desired consistency for the application by adjusting of the degree of dilution. It thus provides individual solutions with regard to the surface texture and the degree of gloss of the restoration.

From surface staining to the shading of layering materials – IPS Ivocolor offers a solution for any technique.

Indications

Staining and/or characterization and glazing of ceramic materials from Ivoclar Vivadent and Wieland Dental:
- veneering ceramics
- press ceramics
- milling ceramics
- zirconium oxide (frameworks and full-contour restorations)

Contraindications

- IPS Ivocolor is contraindicated for all applications not explicitly listed as indication.
- IPS Ivocolor is not suitable for staining, characterizing and glazing of partially crystallized IPS e.max CAD restorations (in their blue state), as well as for IPS e.max® CAD Veneering Solutions.

Uses

Staining and glazing of **tooth-coloured** ceramic materials:
- IPS e.max® Press
- IPS e.max CAD (crystallized)
- IPS e.max ZirPress
- IPS e.max ZirCAD (sintered)
- IPS e.max Ceram
- IPS Empress® Esthetic
- IPS Empress CAD
- IPS Style® Ceram
- IPS Style Press
- IPS d.SIGN®
- IPS InLine®
- IPS InLine PoM
- Zenostar® (sintered)

Individualization of layering materials:
- IPS e.max Ceram
- IPS Empress Esthetic Veneer
- IPS Style Ceram
- IPS InLine
- IPS d.SIGN

Limitations of use

If a patient is known to be allergic to any of the components of the material, IPS Ivocolor must not be used.

Warnings

– Do not inhale ceramic dust during finishing.
– Use suction and respiratory protection.

Material properties

Properties	Unit	Specifications	
Flexural strength	MPa	≥ 50*	
Chemical solubility	µg/cm²	≤ 100*	
Coefficient of thermal expansion (25 – T_G°C)	$10^{-6}K^{-1}$	Glaze	9.3 ± 0.5*
		Glaze FLUO / Essence / Shade pigment content ≤ 4%	9.2 ± 0.5*
		Essence / Shade pigment content > 4 to ≤ 12%	9.1 ± 0.5*
		Essence / Shade pigment content > 4 to ≤ 12%	8.8 ± 0.5*
Glass transition temperature T_G	°C	460 ± 20*	
Radioactivity U^{238}	Bq/g	≤ 1*	

* The performance criteria defined in EN ISO 6872:2008 Dentistry – Ceramic materials (ISO 6872:2008) were met.

Classification: Dental ceramics Type I / Class I

Composition

– **IPS Ivocolor Essence**
Components: Alkali aluminosilicate glass
Additional components: Pigments

– **IPS Ivocolor Shade**
Components: Alkali aluminosilicate glass
Additional components: Solvent, pigments

– **IPS Ivocolor Glaze Powder/FLUO**
Components: Alkali aluminosilicate glass

– **IPS Ivocolor Glaze Paste/FLUO**
Components: Alkali aluminosilicate glass
Additional components: Solvent

– **IPS Ivocolor Liquids/Fluid**
Components: Solvent

IPS Ivocolor Assortment

IPS Ivocolor Essence

IPS Ivocolor Essence are powder stains in 23 different shades.
For the individual surface characterizations, the IPS Ivocolor Essence powders are mixed with liquids and applied on the restoration. For the individualization of layering materials, they are added to Dentin, Enamel or Transpa materials or applied into an unfired ceramic build-up. Similar to natural teeth, the light IPS Ivocolor Essence materials feature a certain fluorescence.

IPS Ivocolor Shade

IPS Ivocolor Shade are ready-to-use pastes in 9 dentin shades and 3 incisal shades. The Ivocolor Shade Dentin pastes are coordinated with the A-D shades and are used to tint the shades of ceramic restorations. Similar to natural teeth, the light IPS Ivocolor Shade materials feature a certain fluorescence.

IPS Ivocolor Glaze Powder/FLUO

IPS Ivocolor Glaze Powder and IPS Ivocolor Glaze Powder FLUO are glazing powders. By glazing restorations with IPS Ivocolor Glaze Powder FLUO, they are given a fluorescent effect.

IPS Ivocolor Glaze Paste/FLUO

IPS Ivocolor Glaze Paste and IPS Ivocolor Glaze Paste FLUO are available as ready-mixed glazing pastes.

IPS Ivocolor Mixing Liquid allround

IPS Ivocolor Mixing Liquid allround is a liquid for mixing with IPS Ivocolor powders and pastes.

IPS Ivocolor Mixing Liquid longlife

IPS Ivocolor Mixing Liquid longlife has been developed for the same range of applications as IPS Ivocolor Mixing Liquid allround. The more viscous consistency and slower evaporation of the liquid results in a somewhat higher viscosity of the mixed powder or paste and thus prolongs the processing time.

IPS Ivocolor Essence Fluid

With IPS Ivocolor Essence Fluid, IPS Ivocolor Essence powders can be mixed to a pasty consistency and obtain similar glazing properties as IPS Ivocolor Shades. IPS Ivocolor Essence Fluid is only suitable for the initial mixing with IPS Ivocolor Essence.

Open products must be immediately resealed after dispensing so that the material properties are maintained.

IPS Ivocolor material shade guides

IPS Ivocolor material shade guides are available in the versions Essence and Shade. The shade guides provide guidance in the selection of Essences and Shades.

Please observe the mixing table for Essences, Shades, Glazes and Liquids on page 29.

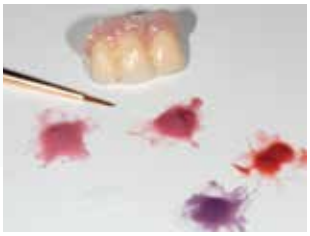
The entire delivery range can be found at www.ivoclarvivadent.com

IPS Ivocolor

Processing

Recommended application

IPS Ivocolor offers multiple options for the individual "staining" and characterization of ceramic restorations.



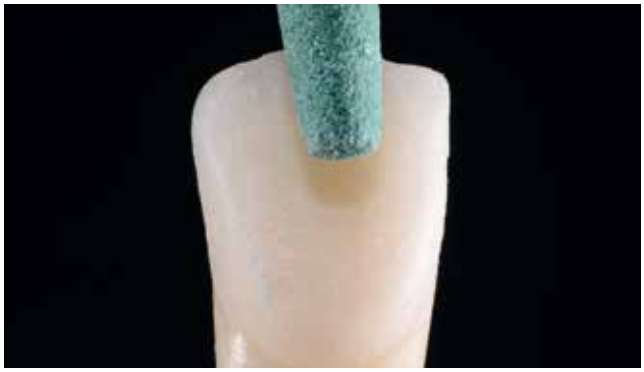
Preparation for the Stain and Glaze firing

Shade alone does not make an esthetically appealing restoration. The following processing tips describe the expert preparation of the tooth surface in accordance with the material used for the restoration.
Please observe the processing guidelines in the Instructions for Use for the respective material.

IPS e.max® Press

Before the pressed restorations can be customized, they have to be divested, sandblasted, cleaned and separated.

The restoration is finished with diamond-bonded grinding instruments.



As an option, the restoration can be prepolished with diamond-bonded polishers.

The individual microtexture of the restoration surfaces can be achieved with diamond grinding instruments.

– A steam jet and/or ultrasonic bath is suitable for cleaning the restoration.
– The cleaned restoration can now be stained and glazed.

IPS e.max® CAD

– The milled restoration must be separated from the milling block before individual characterizations are applied.
– Once the attachment point of the holding pin has been smoothed out, the restoration is thoroughly finished in its partly crystallized (blue) state using diamond-bonded grinding instruments and polishers (please observe "IPS e.max Recommended Grinding Instruments for Glass-Ceramics").
– The individual microtexture of the restoration surfaces can be achieved with diamond grinding instruments.
– A steam jet or ultrasonic bath is suitable for cleaning the restoration.
– The restoration is crystallized.
– The restoration must not be blasted with Al_2O_3 or glass polishing beads.
– The cleaned restoration can now be stained and glazed.

Please observe the processing guidelines in the IPS e.max CAD Instructions for Use.

IPS Empress® CAD

– The milled restoration must be separated from the milling block before the individual characterizations are applied.
– The restoration is thoroughly finished with diamond-bonded grinding instruments and polishers.
– The individual microtexture of the restoration surfaces can be achieved with diamond grinding instruments.
– A steam jet or ultrasonic bath is suitable for cleaning the restoration.
– The cleaned restoration can now be stained and glazed.

Please observe the processing guidelines in the IPS e.max CAD Instructions for Use.

Layering ceramics

– After the final corrective firing, the restoration is thoroughly finished with diamond-bonded grinding instruments and polishers.
– The individual microtexture of the restoration surfaces can be achieved with diamond grinding instruments.
– A steam jet or ultrasonic bath is suitable for cleaning the restoration.
– The cleaned restoration can now be stained and glazed.

Completely finished and cleaned restoration before staining and glazing

Zenostar® full-contour restorations (sintered)

– The sintered restoration should only be finished if it is absolutely necessary.
– If diamond grinding instruments are used for adjustments, the restoration must be cooled with water.
– The restoration is polished in the area of the incisal/occlusal contacts. This protects the antagonist from unwanted wear should the glaze have worn off.
– A steam jet or ultrasonic bath is suitable for cleaning the restoration.
– The cleaned restoration can now be stained and glazed.

The Zenostar® Polish polishing paste is suitable for the polishing of zirconium oxide.

Polishing of the occlusal/incisal contact surfaces before staining

Tips and tricks
– Please observe the material's instructions for use to select the suitable grinding instruments.
– Finished surfaces must not demonstrate any sharp edges or ridges.
– Areas for which a higher degree of gloss is desired after Glaze firing are smoothed and prepolished with silicone polishers.
– Gold and silver dust to visualize the finished surface texture may only be used on homogeneous/pore-free surfaces.
– If gold or silver dust is used, the restoration must be thoroughly cleaned with the steam jet or in an ultrasonic bath.
– The restoration must be free of contaminations and grease residue before staining and glazing.
– To improve the wettability before staining, ceramic powder may be used for fine polishing.

Surface staining and characterization of restorations

a. Staining with IPS Ivocolor Shade Dentin and Shade Incisal

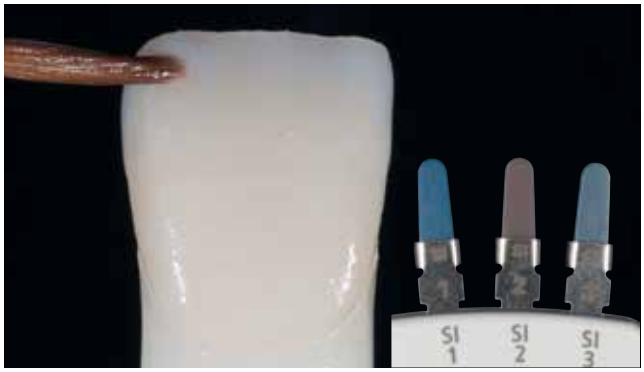
Nine IPS Ivocolor Shade Dentin stains are available as ready-made stains for the staining of restorations in the desired A–D tooth shade (see Shade Combination Table on page 28). Three IPS Ivocolor Shade Incisal materials are available for staining the enamel area.

The Ivoclar Shade pastes feature a gel structure and have to mixed with IPS Ivocolor Mixing Liquids. The mixing consistency affects the application behaviour and the firing result.

Before staining the finished and cleaned restoration, the surface is lightly wetted with IPS Ivocolor Mixing Liquid. This facilitates the application of the IPS Ivocolor Shade pastes.

Apply IPS Ivocolor Shade Dentin in a thin layer in the dentin area.

The enamel areas are stained with
IPS Ivocolor Shade Incisal,
– e.g. SI1 or SI3 for a bluish tint
– Shade SI2 is suitable to provide the enamel area with a purple tint.

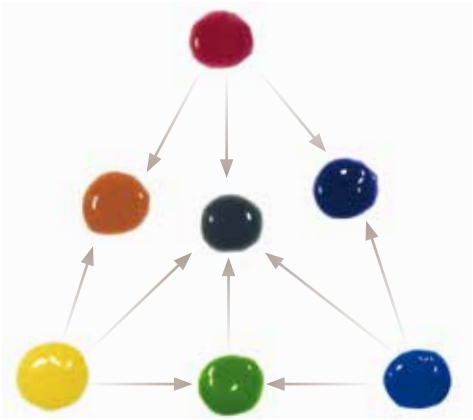


The tooth shade of the completely stained crown is verified with the help of the A-D Shade Guide before the Stain firing.
After that, the restoration is fired (see Firing Tables on page 30).

b. Staining with IPS Ivocolor Essence

IPS Essence stains are particularly suitable for the individual characterization of the restoration. Enamel cracks, white spots, discoloured cervicals and fissures can be recreated in a lifelike fashion.
IPS Ivocolor Essence powders are available in 23 shades. They are mixed with IPS Ivocolor Mixing Liquids allround/longlife or IPS Ivocolor Essence Fluid.

The powders may be used either pure or they can be mixed with each other in any combination. This results in a virtually limitless shade diversity for the staining of restorations.



The IPS Ivocolor Essence basic shades, i.e. basic yellow, basic red and basic blue, provide the possibility of mixing individual stains.
If the basic shades are mixed in a 1:1 ratio according to the colour triangle, the following additional shades can be achieved:
– Blue and red = purple
– Red and yellow = orange
– Blue and yellow = green
– Blue, yellow and red = grey

Mixing in another mixing ratio leads to a resultant shade shift towards the respective basic shade.
Mixing the three basic shades in a 1:1 ratio results in the shade complex-grey.

IPS Ivocolor Essence + IPS Ivocolor Mixing Liquid allround
– Stains for the marking staining of restorations (e.g. enamel cracks, fissures, white spots)

IPS Ivocolor Essence + IPS Ivocolor Mixing Liquid longlife
– Stains for the staining of larger surfaces.

IPS Ivocolor Essence + IPS Ivocolor Essence Fluid
– Stains with a pasty consistency

c. Customized staining

Characterization of a molar crown with IPS Ivocolor Essence and IPS Ivocolor Shade as an example

Completely finished and cleaned restoration

Cusp and marginal ridges can be lightened (e.g. with shades IPS Ivocolor Essence E02 cream or E01 white).

Staining with IPS Ivocolor Essence (e.g. E05 copper for the fissure area, E12 espresso and E10 mahogany for brown discolourations)

Staining the buccal cusp areas with IPS Ivocolor Essence (e.g. E14 profundo, E15 ocean, E16 sapphire) or IPS Ivocolor Shade Incisal.
Tinting the dentin area with tooth-coloured IPS Ivocolor Essence or IPS Ivocolor Shade Dentin.

Completely stained crown after Stain and Glaze firing

d. Mimicking of enamel cracks on an anterior crown as an example

Imitation of enamel cracks (e.g. IPS Ivocolor Essence E01 white, E02 cream, E10 mahogany)

Completely stained crown after Stain and Glaze firing

Tips and tricks

– Pooling and the application of stains in too thick layers must be avoided.
– More intensive shades are achieved by the repeated application of stains and repeated firing, not by applying thicker layers.
– IPS Ivocolor Shade and IPS Ivocolor Essence can be mixed with each other. To adjust the consistency, use only the IPS Ivocolor Mixing Liquids allround / longlife.
– Dried IPS Ivocolor Shade and IPS Ivocolor Essence stains can be rewetted with the IPS Ivocolor Mixing Liquids allround/longlife.
– Repeat firing cycles can be conducted with the same firing parameters.

Optimum glazing

a. Mixing of IPS Ivocolor Glaze Powder/FLUO

IPS Ivocolor Glaze Powder/FLUO can be mixed with IPS Ivocolor Mixing Liquid allround or longlife to the desired consistency

Note: IPS Ivocolor Essence Fluid is not suitable for mixing.

The consistency of the glazing material must not be too thin in order to ensure the gloss effect of the fired restoration.

Drop IPS Ivocolor Mixing Liquid in the Glaze Powder and mix to a homogeneous consistency.

If mixed correctly, the consistency of the glazing material must not be too liquid.

b. Mixing of IPS Ivocolor Glaze Paste/FLUO

Like all IPS Ivocolor pastes, IPS Ivocolor Glaze Paste/FLUO feature a gel-type consistency and have to be mixed with the IPS Ivocolor Mixing Liquids allround or longlife before they are applied. The reduction of the gel structure and thus the stability as well as the flow and application behaviour of the glazing material can be influenced by the degree of dilution.

Stain and Glaze firing in the staining and cut-back technique

For restorations that are characterized using the staining technique, IPS Ivocolor Glaze Pase/FLUO is recommended. The glazing paste is slightly diluted with IPS Ivocolor Mixing Liquid allround/longlife, applied in a covering layer on the restoration and fired using the stipulated firing parameters (see Table 1 on page 30). If the restoration is veneered with layering materials (e.g. cut-back or partial veneer), the stains and glazing materials are to be fired using the same firing programs that have been used for the staining technique (Table 1, page 30).

Stain and Glaze firing in the layering technique

The application of the glazing material depends on the intended firing result. For high-gloss surfaces with little surface texture, the glazing material for veneered restorations must be applied in a thick layer. If a silky-mat surface with pronounced surface texture is desired for ceramic veneers, a thin layer of glazing material must be applied. The firing temperatures for the Glaze firing depend on the firing temperatures of the respective layering ceramic (see Table 2 on page 30).

The following general rule applies: Excessive dilution reduces the stability of the glazing material and the glaze might even become runny. At the same time, the degree of gloss of the fired restoration is reduced if the glazing material is applied while strongly diluted.

In an undiluted state, the gel-type consistency of the pastes renders the application of an even layer difficult. However, this property may also be used for the partial accentuation of the surface.

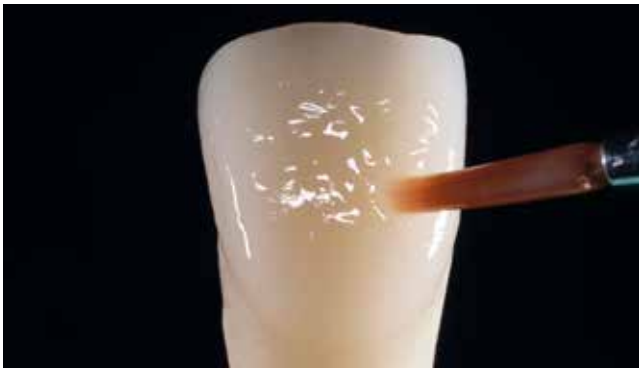
Note: IPS Ivocolor Essence Fluid is not suitable for dilution.

Before the removal from the jar, thoroughly mix IPS Ivocolor Glaze paste with an agate spatula.

Mixing of the IPS Ivocolor Glaze paste
with IPS Ivocolor Mixing Liquid allround or longlife

If mixed correctly the consistency of the glazing material must not be too liquid.

c. Application of the glaze



Apply the glazing material in an even layer on the entire restoration. The correctly mixed glazing material remains on the restoration and does not run.

If the glazing material is mixed to too thin a consistency, it tends to turn runny on the restoration, which results in an insufficiently covering glaze layer.

If the glazing material is applied correctly, the restoration demonstrates an even gloss after firing and features the surface texture.

Tips and tricks

– The degree of gloss of the glazed surface is controlled via the consistency of the glazing material and the applied quantity, not by means of the firing temperature. For a higher degree of gloss, the glazing material has to be applied in a correspondingly thicker layer.
– In the staining technique on monolithic restorations, the application of a fluorescent glazing material (IPS Ivocolor Glaze Paste FLUO or Powder FLUO) is recommended.
– In partially veneered restorations, the full-contour and veneered parts may be glazed in one firing cycle at the same temperature. Apply the glazing material in a covering layer on the entire restoration. Due to the low firing temperature, an even gloss is developed on the surface of the restoration. The firing temperature is set according to the recommendation for monolithic restorations.
– For minor shade adjustments, a little IPS Ivocolor Shade or IPS Ivocolor Essence can be mixed into the glazing material and fired.
– Additional Glaze firing cycles can be conducted with the same firing parameters.
– For restorations fabricated in the CAD/Press technique, the use of IPS Ivocolor Paste/FLUO is recommended.

Conduct the Glaze firing with the stipulated firing parameters on a firing tray suitable for the respective ceramic furnace. Firing parameters see page 30.

Individual characterization of all-ceramic frameworks

Individual characterization of frameworks
- IPS e.max Press
- IPS e.max CAD (crystallized)
- IPS e.max ZirCAD (after ZirLiner firing)
- Zenostar (sintered)

Especially if the available space for the veneer is limited, the individualized staining of the copings may impart a depth effect to the restoration.

Individual characterization of a zirconium oxide framework as an example

Sintered zirconium oxide coping

Individualized staining/tinting of the coping with IPS Ivocolor Shade Dentin and/or IPS Ivocolor Shade Incisal. As an alternative, IPS Ivocolor Essence stains may be used for characterization.

Conduct the Stain and Characterization firing with the stipulated firing parameters on a firing tray suitable for the respective ceramic furnace. Firing parameters see page 30.

Mixing of IPS Ivocolor Essence into layering materials

Layering materials can be individually tinted with IPS Ivocolor Essence Powder.

a. Tinting of dentin materials (e.g. Dentin, Deep Dentin)

It is recommended to fabricate a firing sample of the modified material to be able to assess the tinting result before the actual layering procedure.

Example: Mixing of Dentin material and IPS Ivocolor Essence E09 terracotta

Fired shade samples:
– Left: unshaded Dentin firing sample
– Centre: slightly shaded Dentin firing sample
– Right: strongly shaded Dentin firing sample

b. Changing the shade effect of enamel materials by tinting them with IPS Ivocolor Essence

Example: Mixing of Enamel material and IPS Ivocolor Essence E05 copper

Fired shade samples:
– Left: unshaded Incisal firing sample
– Centre: slightly shaded Incisal firing sample
– Right: strongly shaded Incisal firing sample

c. Staining of Transpa materials

Example: Mixing of Transpa Clear and IPS Ivocolor Essence E05 copper and E02 cream

Fired shade samples:
– Left: unshaded Transpa firing sample
– Right: shaded Transpa firing sample

Tinting Incisal materials requires only very little of the IPS Ivocolor Essence powders. More intense tinting results in a reduction of the translucency of the layering materials. By mixing a maximum of 5% IPS Ivocolor Essence into high-sintering layering ceramics (e.g. IPS InLine, IPS Classic), the firing temperatures stipulated in the respective Instructions for Use have to be reduced by up to 15°C (59°F).

Tips and tricks

– Mixing ratios: IPS Ivocolor Essence powders are intensively shaded and should only be added in small amounts (max. 5%) to the respective carrier materials.
– The mixture of layering material and Essence is mixed using the recommended modelling liquid (no IPS Ivocolor liquids)

Please observe the firing parameters for the layering materials!

Individual characterization of the layering (inclusion of Essence)

d. Designing mamelons

To achieve true-to-nature, in-depth shade effects in the restoration, the inclusion of IPS Ivocolor Essence stains is a possible technique. The layering is fired using the firing programs for the respective layering ceramic.

– The mixed IPS Ivocolor Essence stains are included into the precontoured layering (e.g. E 02 cream, E09 terracotta).
– After that, the layering is completed with Enamel and Transpa materials.
– IPS Ivocolor Mixing Liquid allround is recommended for mixing with IPS Ivocolor Essence.

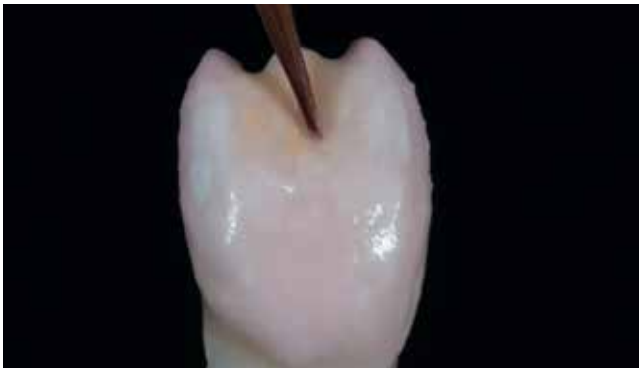
Crown after firing

e. Increasing the depth effect

– By including IPS Ivocolor Essence in blue or grey shades, a depth effect can be achieved or the greying of teeth can be imitated (e.g. E14 profundo or E17 anthracite).
– After that, the layering is completed with Enamel and Transpa materials.

Crown after firing

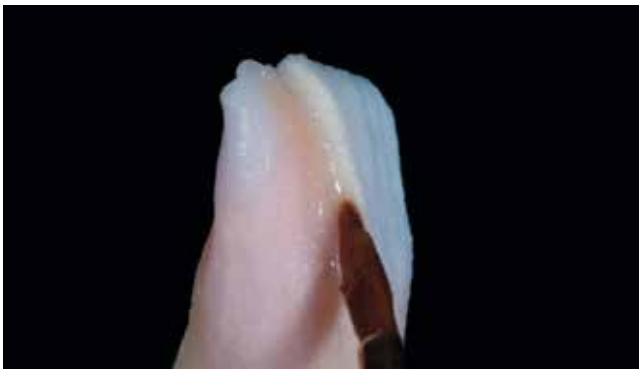
f. Increasing the brightness value and mimicking of incisal discolouration



– By including light IPS Ivocolor Essence stains, the brightness of the restoration can be enhanced (e.g. E 01 white and E 04 sunset).
– After that, the layering is completed with Enamel and Transpa materials.

Crown after firing

g. Designing enamel cracks



– Any IPS Ivocolor Essence stains can be used to design enamel cracks.
– After that, the build-up is completed with Enamel and Transpa materials.

Fired crown with enamel cracks

Characterization with an intermediate firing cycle

Individual characterizations can be applied with an intermediate firing cycle.

– The mixed Essence materials are applied and fired on a reduced-shape cut-back.
– After that, the build-up is completed with Enamel and Transpa materials.

The final firing result after layering with Enamel and Transpa materials

Please observe the firing parameters for the layering materials!

Characterization of the gingiva

For the individualized shade design of the gingiva components, IPS Ivocolor Essence shades E19 rose, E20 coral and E21 basic red can be used. The stains can be mixed with each other or tinted with any other IPS Ivocolor Essence stains.

Options for the individualization of the gingiva:
– Shade modification of Gingiva layering materials by mixing in IPS Ivocolor Essence stains
– Surface staining of the gingiva with IPS Ivocolor Essence stains

Example:
Restoration with IPS e.max ZirPress Gingiva before characterization

Mixing the shade using red colour tones.
– By mixing the IPS Ivocolor Essence stains, individualized shades can be achieved.
– The red shades rose, coral and basic red can be used alone or modified with yellow (e.g. basic yellow) and blue shades (e.g. basic blue).

– The surface of IPS e.max ZirPress Gingiva can be stained with IPS Ivocolor Essence stains.

Alternative characterization of the gingiva:
– After staining, additional layers can be added to the stained gingiva.
– Another option is the staining of layering materials by adding IPS Ivocolor Essence to the Gingiva layering materials.

Tips and tricks
– IPS Ivocolor Essence powders are intensively shaded and should only be added in small amounts (max. 5%) to the respective carrier materials.
– The mixture of layering material and Essence is mixed with the liquid recommended for the respective layering material (do no use any stain/glaze liquid).

Conduct the Stain and Characterization firing with the stipulated firing parameters on a firing tray suitable for the respective ceramic furnace. Firing parameters see page 30.
Stained layering ceramics are fired according to the recommendations of the layering materials manufacturer.

Important and Interesting

Frequently Asked Questions

Can IPS Ivocolor also be used to stain ceramics from manufacturers other than Ivoclar Vivadent and Wieland Dental?

IPS Ivocolor has only been tested and approved for IPS ceramics and Zenostar zirconium oxide. If IPS Ivocolor is used for other ceramic materials, the responsibility lies with the user.

Can IPS Ivocolor also be used for the crystallization firing of IPS e.max CAD restorations?

IPS Ivocolor is not suitable for the staining and glazing of "blue" IPS e.max CAD restorations. After the crystallization firing, IPS Ivocolor can be used for the individualized characterization and glazing.

Can IPS Ivocolor Essence Fluid be used for mixing IPS Ivocolor Shade, Glaze Powder/FLUO, Glaze Paste/FLUO?

IPS Ivocolor Essence Fluid is exclusively suitable for mixing with IPS Ivocolor Essence. The use of the Essence Fluid to dilute and mix the Shade and Glaze pastes may negatively affect the adjustment of the correct consistency, the application behaviour and the firing results.

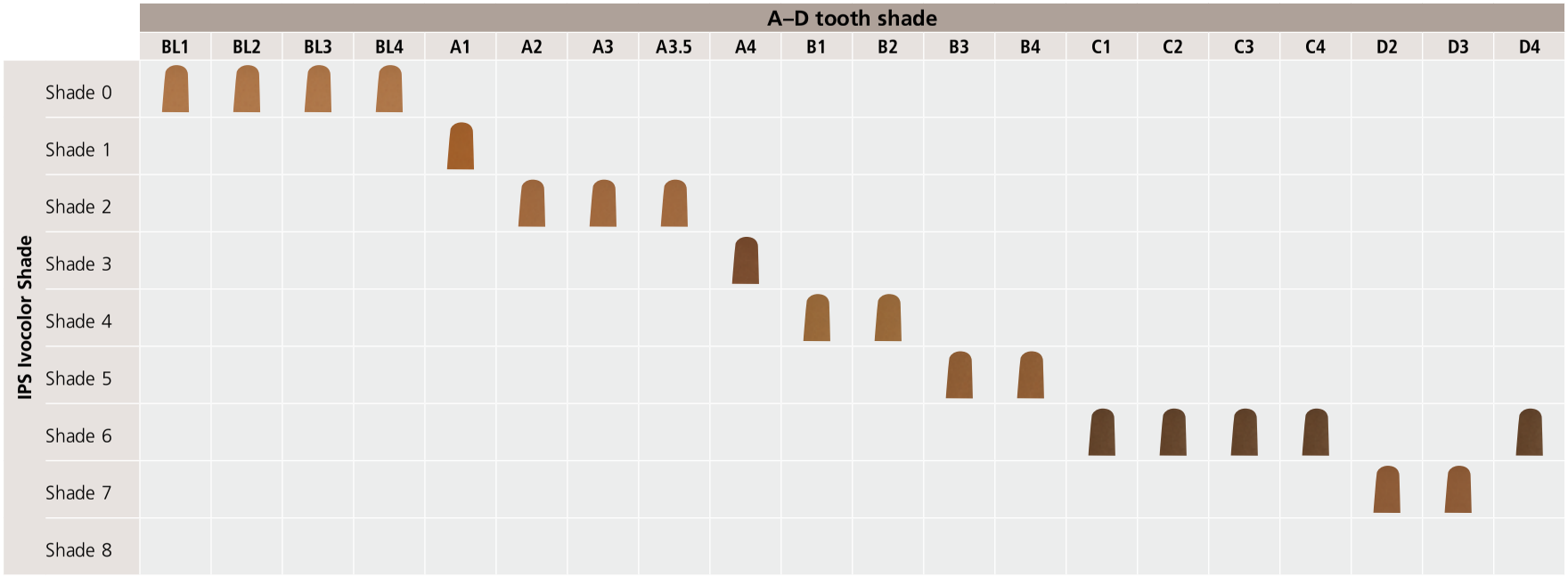
Can dried out IPS Ivocolor Essence stains, which had been mixed with IPS Ivocolor Essence Fluid, be rewetted with IPS Ivocolor Essence Fluid?

The renewed mixing/rewetting is exclusively done with IPS Ivocolor Mixing Liquid allround or longlife. IPS Ivocolor Essence Fluid is not suitable for this purpose.

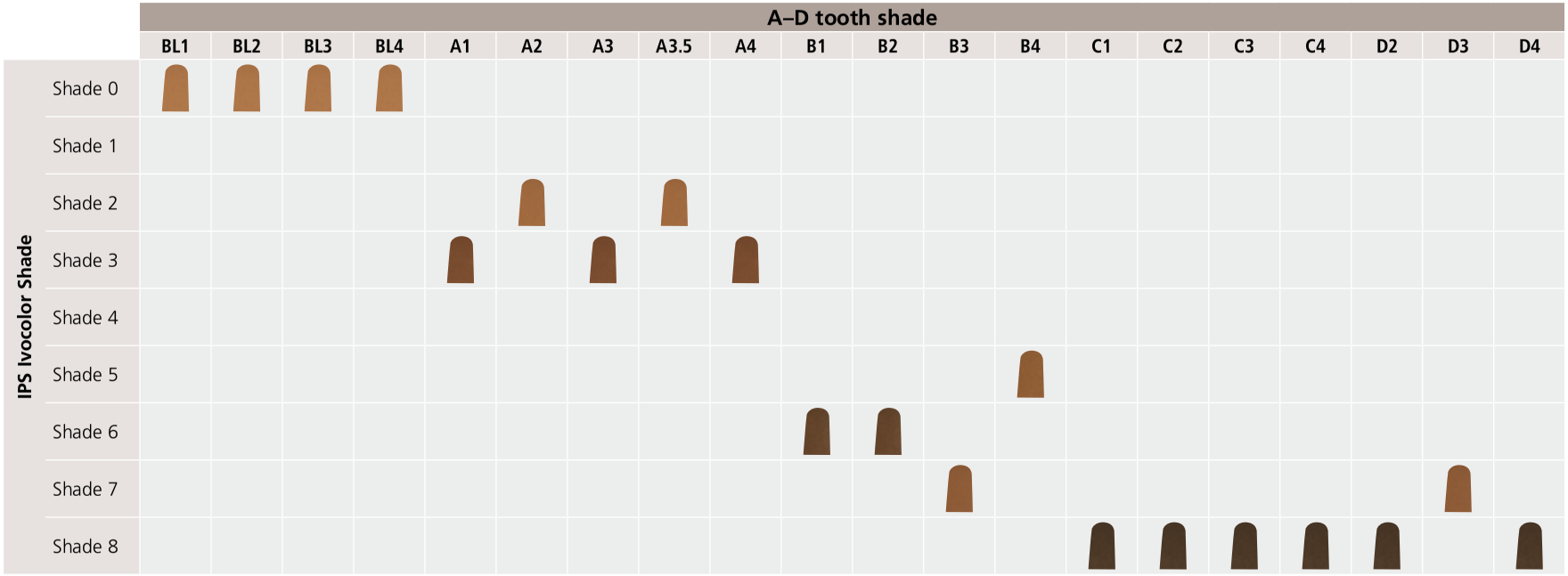
Can IPS Ivocolor be fired in other furnaces?

If a furnace other than the ones mentioned is used, the firing parameters have to be used accordingly. However, they can merely be considered a guideline, as every furnace type produces a different firing result. Conducting a test firing cycle is recommended.

Combination table for staining the layering materials and all-ceramic materials of the IPS system:



Combination table for staining all-ceramic restorations made of Zenostar T:



Combination Table for IPS Ivocolor Components

	Initial Mixing			Refreshing of dried out materials		
Components	**IPS Ivocolor Mixing Liquid allround** 	**IPS Ivocolor Mixing Liquid longlife** 	**IPS Ivocolor Essence Fluid** 	**IPS Ivocolor Mixing Liquid allround** 	**IPS Ivocolor Mixing Liquid longlife** 	**IPS Ivocolor Essence Fluid** 
 **IPS Ivocolor Essence**	✓	✓	✓	✓	✓	✗
 **IPS Ivocolor Shade**	✓	✓	✗	✓	✓	✗
 **IPS Ivocolor Glaze Powder/ FLUO**	✓	✓	✗	✓	✓	✗
 **IPS Ivocolor Glaze Paste/ FLUO**	✓	✓	✗	✓	✓	✗

Firing Tables

Table 1

Stain and Glaze firing in the staining and cut-back technique (monolithic/partially veneered)

	Stand-by temperature **B** [°C/°F]	Closing time **S** [min]	Heating rate **t↗** [°C/min]	Firing temperature **T** [°C]	Holding time **H** [min]	Vacuum 1 **V_1** [°C]	Vacuum 2 **V_2** [°C]
IPS e.max® Press	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS e.max® CAD	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS e.max® ZirPress	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS Empress® Esthetic	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS Empress® CAD	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS Style® Press	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS InLine® PoM	403/757	6	60/108	710/1310	1	450/842	709/1308
Zenostar®	403/757	6	45/81	710/1310	1	450/842	709/1308

For the final Stain and/or Glaze firing of IPS e.max ZirPress and IPS Style Press restorations, as well as Zenostar restorations veneered with IPS e.max Ceram, long-term cooling to 450°C (842°F) is required.

If several Zenostar restoration units (multi-unit bridges with massive bridge pontics or several full-contour restorations) are fired with the same firing cycle, the thorough heating of the objects to be fired may be delayed. This can be counteracted by reducing the heating rate or prolonging the holding time at the final temperature.

Table 2

Stain and Glaze firing in the layering technique (full veneer)

	Stand-by temperature **B** [°C]	Closing time **S** [min]	Heating rate **t↗** [°C/min]	Firing temperature **T** [°C]	Holding time **H** [min]	Vacuum 1 **V_1** [°C]	Vacuum 2 **V_2** [°C]
IPS e.max® Ceram	403/757	6	60/108	710/1310	1	450/842	709/1308
IPS Style® Ceram	403/757	6	60/108	750/1382	1	450/842	749/1380
IPS d.SIGN®	403/757	6	60/108	800/1472	1	450/842	799/1470
IPS InLine®	403/757	6	60/108	830/1526	1	450/842	829/1524

If IPS e.max ZirCAD or Zenostar restorations are veneered with IPS e.max Ceram, long-term cooling to 450°C (842°F) is required.

– The indicated firing parameters are guidance values. They are valid for the Ivoclar Vivadent furnaces Programat® P310, P510, P710, P300, P500, P700, EP 3010, EP 5010, EP 3000, EP 5000. For furnaces of an older generation (e.g. P80, P90, P95, P100, X1) these temperatures are also guidance values. However, depending on the age of the heating muffle, the values may deviate by +/– 10°C.
– If a non-Ivoclar Vivadent furnace is used, temperature corrections may be necessary.
– Regional differences in the power supply or the operation of several electronic devices by means of the same circuit may render adjustments of the temperatures necessary.

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