ENAMEL plus HFO®

(GB) ENGLISH
Enamel plus HFO instructions

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Enamel Plus HFO

Enamel Plus HFO is a light curing radiopaque composite for direct and indirect aesthetic restorations in anterior and posterior sectors. It follows the standard ISO 4049:2000. The system includes:

a. Micro hybrid radiopaque light curing composite for direct and indirect restorations available in the following shades:

3 Generic Enamel	G.E.1 (low value), G.E.2 (medium value), G.E.3 (high value)
4 Opalescent Enamels	O.W. (white), O.B.N. (blue), O.G. (grey), O.A. (amber)
2 Intensive White Enamels	I.W. (intensive white), I.M. (intensive milky)
7 Fluorescent Dentines	UD1 (A1*) - UD2 (A2*) - UD3 (A3*) - UD3,5 (A3,5*) - UD4 (A4*) - UD5 (IR5) - UD6 (IR6) Available on request: B1* - B2* - B3* - B4* - IY5 - C1* - C2* - C3* - C4* - IG5 - D3* Enamels and dentines have different characteristics of fluorescence.

Composition

- MONOMER MATRIX: Diurethandimethacrylate, Iso-propyliden-bis (2(3)-hydroxy-3(2)-4(phenoxy)propyl)-bis(methacrylate)(Bis-GMA); 1,4 - Butandioldimethacrylate**.**
- TOTAL CONTENT OF FILLERS: 75% weight (53% volume); glass filler: mean particle size 0.7 μm; highly dispersed silicone dioxide: mean particle size 0.04 μm

Clinical indications

Class I (all cavities)	Sealing	Inlays Class I (all cavities)
Class II (small and medium cavities)	Cosmetic corrections	Inlays Class II (all cavities)
Class III (all cavities)	Total and partial vestibular covering	Inlays Class IV (all cavities)
Class IV (all cavities)	Complex restorations	Onlays
Class V (all cavities)	Laminated veneers	Restoration of prosthetic cores

b. Glass Connector is a highly fluorescent, flowable light-curing composite for reproduction of protein layer in direct and indirect restorations

Composition

- MONOMER MATRIX: Diurethandimethacrylate, Iso-propyliden-bis (2(3)-hydroxy-3(2)-4(phenoxy)propyl)-bis(methacrylate)(Bis-GMA); 1,4 - Butandioldimethacrylate.
- TOTAL CONTENT OF FILLERS: 50% weight; (36% volume); glass filler: mean particle size 0,7 μm; highly dispersed silicone dioxide: mean particle size 0.012 μm

Indications. Glass connector is used for:

- Increasing internal light diffusion
- Strengthening the fluorescence of dentin body
- Reducing the decrease of value of the shade
- Reducing the internal tension due to the polymerisation

c. Flow Dentine is a fluorescent flowable, micro hybrid, light-curing composite to be used as liner, available in the following shades:
UD2 (A2*) - UD3 (A3*) - UD4 (A4*) - UD5 (IR5) - UD6 (IR6)
Also available on request: B3* - B4* - IY5

Composition

- MONOMER MATRIX: Diurethandimethacrylate, Iso-propyliden-bis (2(3)-hydroxy-3(2)-4(phenoxy)propyl)-bis(methacrylate)(Bis-GMA); 1,4 -Butandioldimethacrylate.
- TOTAL CONTENT OF FILLERS: 55% weight (36% volume); glass filler: mean particle size 0,7 μm; highly dispersed silicone dioxide: mean particle size 0.012 μm

Indications

Enamel plus HFO Flow is used as liner in cavities of composite restorations, where a low viscosity and high elasticity are required

d. Fluorescent Flow Stain is a system of light curing stains made of composite for the characterisation of composites and acrylics
Introductory kit COSSTAINKIT contains:
-6 light curing stains: white, yellow, orange, blue, brown, dark brown (brown 2)
-6 brushes: C, F, M (2 per type)

Composition

- MONOMER MATRIX: Diurethandimethacrylate, Iso-propyliden-bis (2(3)-hydroxy-3(2)-4(phenoxy)propyl)-bis(methacrylate)(Bis-GMA); 1,4 - Butandioldimethacrylate.
- TOTAL CONTENT OF FILLERS: 50% weight (36% volume); glass filler: mean particle size 0,7 μm; highly dispersed silicone dioxide: mean particle size 0.012 μm

Indications

Characterisation of composite and acrylic materials in dental office and laboratory

Contra-indications
Uncured resin could cause skin allergy: User should use gloves. In case of known allergy to some of the components do not use it.
Side effects
In deep cavities we suggest to use a liner in order to avoid pulpal reactions.
Materials to be avoided
Materials containing phenolics (like eugenol) could inhibit composite curing. Avoid the use of these materials as liners.

* Colours of Vita® shade guide. Vita® is a registered trademark of Vita Zahnfabrik H. Rauter mbH & Co. KG, Bad Säckingen - D

DOSAGE AND DIRECTIONS FOR USE

DIRECT METHOD. Fillings and direct aesthetic restorations of class I-II-III-IV-V (Black classes).

Preparation

- Clean with fluoride-free prophylaxis paste.
- Choose colours with Vita® shade guide or with Enamel plus HFO composite shade guide, and fill in the colour chart.
- Preparation: for anterior teeth, use a conservative preparation with bevel, which allows a good enamel etching (for posterior do not make any bevel).
- We suggest using a rubber dam.
- In case of interproximal cavities, use transparent matrix.

Etching Follow your normal technique. We suggest 35%-38% phosphoric acid (EnaEtch) for 15-30 seconds for enamel and vital dentin, 1 min for sclerotic dentin and 2 min. for non-vital dentin. Wash and dry the etched surface with oil-free air; etched enamel looks white calcareous. Etched surfaces should not be contaminated before the application of the bonding (Rock Bond or EnaBond). In case of contamination with saliva, wash, dry and etch again (avoid dentine drying up).

Bonding

Apply some thin coats of bonding (Rock Bond, Enabond) on etched surfaces of dentine and enamel, pulling it down carefully on the margins. Cure for 40 s. (with Translux CL or Nou-Lite halogen light curing units). You will find a thin layer of uncured resin that should not be contaminated or wetted because it creates the chemical connection to the composite.

Composite application

- MICROHYBRID COMPOSITE: take Enamel Plus HFO out from syringes or "tips" and apply it, using Dentines and Opalescent Enamels internally and Generic Enamels for the tooth surface; consult the manual for use: "ENAMEL plus HFO new generation".
- GLASS CONNECTOR: take Enamel Plus HFO Glass Connector out from syringes using the application needles and apply it, using Enamel Plus M brush between the dentine and enamel body in order to reproduce the protein layer of the natural tooth. Note: The layer should be very thin (less than 0,1mm). Due to the high fluorescence, Glass Connector should be not applied on the margin of the restoration.

Note. Apply very small quantities of material by pulling it down with a brush (Enamel plus HFO "M" brush for anterior and "F" for posteriors) in order to avoid any bubbles. Use a "waves" application technique in order to allow a better light diffusion effect. Cure layers of 1-1,5 mm (no more than 2 mm) for 40 seconds, from all sides of the build up; keep the light-curing tip as close as possible to the restoration. Oxygen leaves a thin layer of uncured composite: this layer should not be contaminated or wetted because it creates a chemical connection between the different layers of composite. We advise to apply an Air Block (Shiny G), when the restoration is finished and before the final light curing takes place. This glycerine-based product eliminates the oxygen and allows a complete curing of the surface.

Curing. Working time under standard light is approximately 3 minutes. During long build up cover the composite with an opaque foil or use black cover of the colours palette COSTAINO1. Note: avoid direct light of the equipment lamp, and switch it off if possible. Cure each layer for 40 seconds.

Finishing and polishing

Use diamond burs and diamond pastes. Do not use any disc buccally in order to avoid destroying the texture surface. We suggest to use the complete finishing and polishing system Enamel plus SHINY.

INDIRECT METHOD: Inlay, Onlay and Veneers

Preparation

Preparation should be made without undercuts, and for posteriors using slightly tapered diamonds should round internal edges. Minimum thickness of coat lateral and vertical should be 1,5 mm to avoid breakage. Close undercuts by using Enamel plus HFO Flow composite.

Impression and Temporary

Take an impression and use Enamel plus Temp for temporary inlay and cement it with eugenol-free cement.

Laboratory procedure

Pour a model with extra-hard plaster. After the plaster setting, remove the impression and use on the model an oil-free separator (Enamel plus SEP). Follow same stratification technique as in direct method. For inlay first build up the external walls and then the occlusal areas. It is possible to use Enamel plus HFO stains between dentin and generic enamel. Each layer should not be thicker than 2 mm and should be cured for 40 sec.

Go on with a final light curing of 11 minutes in high power light curing unit like LaborluxL or for 30 minutes in 86W light box like LAMPADAPLUST. Finish with burs and polish with Enamel plus SHINY brushes and diamond pastes. Wash with soap and water and dry with oil-free air spray.

Note. For further technical instructions also on restorations on metal and fibre structure, please consult the manual "Enamel plus HFO Tender, laboratory procedures".

Luting

Remove the temporary appliance and clean the cavity. Try-in the appliance carefully and proceed with eventual corrections. Post-cure in an oven like LAMPADAPLUST for 9 min. Apply the rubber dam. Clean the surface of the preparation with alcohol and sandblast it. Etch the cavity and apply two coat of bonding, EnaBond, without curing it. Sandblast the internal part of the composite appliance and clean it with alcohol; apply the bonding without curing it. Apply a small amount of Enamel plus HFO, Opalescent White or a light dentine (UD1, UD2 or UD3) in the internal side of the appliance to be luted, position it on the tooth and condense it mechanically or manually. Remove composite excess and cure for at least 80 seconds from each side of the tooth. Check the occlusion, finish and polish with Enamel plus Shiny system, using burs, strips and diamond pastes.

Note: in case of inlay thickness over 2 mm use a dual luting composite ENACEM (see instruction)

Curing information

It's necessary to use a light-curing unit with a spectrum of 350 - 500 nm. The required physical results can be reached only if using multi walls reflecting unit. For this reason we suggest a periodical check of the light intensity following the manufacturer's instructions. Most curing units reach a complete cure to a depth of 4,6 mm. Optimal values are reached at 2,3 mm.

APPLICATION OF DENTINE FLOW

Take Enamel Plus HFO Flow out from syringes using the application needles and apply it as liner in the cavity with a brush (Enamel plus M brush) before the application of the microhybrid bodies (see above instructions of Enamel plus HFO).
In case the Flow is used as a liner for Inlays, apply it before taking the impression. Cure as described in "DIRECT METHOD"
Note: instructions for Flow syringe. Apply the unidose tip on the syringe after unscrewing the cap**.** Being composite flowable, when you push the piston you will activate a thrust and the material will start and continue to come out. To stop the flow it is enough to pull the piston back of only 1mm. Careful: avoid pulling piston excessively, otherwise air can come into syringe and air bubbles will enter in the following emissions of material. A minimum opposite movement is enough, the piston will return in position elastically, avoiding air bubbles. To avoid the excessive emission of material we suggest to hold the tips of the syringe direct upwards till next application on the same patient. We also suggest starting pushing the piston in this position, so if there would be air in the syringe, bubbles will come out before the material. At the end of the restoration, remove the unidose tip and place again the cap on the syringe screwing it.

APPLICATION OF STAINS

Take Enamel Plus HFO STAIN Flow out from syringes using the application needles and apply it, using Enamel Plus C brush. The M brush is suggested for composite application and smoothing, while the F brush was developed for the fossa moulding.
Be careful during the light curing stains application because of colour intensity and material fluidity. It is possible to use stains mixed with composite bodies for shoulder and dentin. You can obtain the individualisation of the composite mixing, applying or introducing colours. When handling the material be careful not to create bubbles

Use Stains on acrylic

TEMP BONDING FLUID has to be applied before the use of Stains if the material will be used in combination with acrylics: we suggest abrading the surface of the restoration with sand of aluminium oxide (50 micron) before the application of TEMP BONDING FLUID. Cure TEMP BONDING FLUID for ca 90 sec. with LABORLUXL.
Curing: Apply a very thin layer of Enamel Plus HFO STAIN Flow (no more than 0,3 mm for dark shades).
Laboratory curing times:

- LABORLUXL (MICERIUM)	ca.	3-5 min.*
- Spektra 2000 (Schütz-Dental)	ca.	3-5 min.*
- Spektramat (Ivoclar)	ca.	3-5 min.*
- Lampada Plus T with light 71- 86W (Micerium)	ca.	7-10 min. *
- Lampada Plus with light 71- 36W (Micerium)	ca.	20-30 min.*

* depending on colour

Dental office curing times:

- Translux CL (Kulzer)	ca.	40 sec.
- Nou-Lite halogen lamp (Nouvag)	ca.	40 sec.

USE AND STORAGE

Do not store above 25°C.
Do not use the product after the expiration date (see label on syringe or on "tips" container).
Due to hygienic reasons "Enamel Plus HFO Tips" and flow application needles should be used only once.
Use the material at room temperature. Medical device, for dental use only: keep away from children.
Turn back the spindle after taking out the material, to avoid sticking of the material.
After use, close container with cap and keep it closed. Avoid direct exposure to sunlight.
If the material is not completely cured, it may discolour, mechanical properties deteriorate and pulpal inflammation can occur.