

# MerFill NANO

## UNIVERSAL LIGHT-CURING RESTORATIVE COMPOSITE

MerFill NANO is a modern composite restorative material based on nano-hybrid technology which allows to combine the excellent esthetics, excellent polishability and improved manual properties with outstanding physical and mechanical characteristics such as radiopacity, flexural, compressive and tensile strength and etc.

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### ●● THE MAIN FEATURES OF MATERIAL ARE THE FOLLOWING

- 3-modal nano-hybrid filler consists of non-agglomerated nano-sized radiopaque glass, non-agglomerated nano-sized non-aggregated silica and 5-20 microns clusters consisted of agglomerated nanosilica-nanoglass incorporated into special methacrylate resin matrix granulated and polymerized under special technology.
- The content of inorganic filler is about 75%
- MerFill NANO contains some kinds of UDMA and other methacrylate oligomers and monomers.

### ●● INDICATIONS

- Highly esthetic restorations of I, II, III, IV and V cavities.
- Onlay and Inlay.
- "Sandwich" technique.
- Fiber Splinting.
- Crown Build Up.

### ●● MAIN PROPERTIES

- MerFill NANO is well balanced transparent, translucent and opaque material, represented in wide range of shade selection, provide superior esthetics;
- MerFill NANO is designed for use in both anterior and posterior restorations
- All shades possess the fluorescence which is similar to fluorescence of human teeth;
- Highly polishable;
- Resilient, non-sticky, yet pliable, consistency facilitates application, especially appreciable in large restorations;
- Exceeds the requirements of the newest ADA and ISO specifications for composite restoratives;
- Three groups of shades provide the Transparency and Opacity of MerFill NANO:
  - Translucent (incisal) shades;
  - Universal dentin shades;
  - Opaque shades.
- Special resins blend, matched filler and pigments mix provide light reflection, refraction and dispersion in the restoratives known as masking "chameleon" effect.

### ●● INSTRUCTION

- Cavities are prepared in the conventional manner.
- In very deep or large restorations and in cases of near pulp exposure the use of a calcium hydroxide liner is recommended.
- The liner should only be placed in the deepest part of the restoration, or such as to cover the near pulp exposure.
- The restoration floor may then be optionally covered with a more mechanically strong dental cement or liner such, containing calcium hydroxyapatite and complex fluorides or fluoroalumosilicate glass.

### ●● RESTORATING OF ANTERIOR GROUPS OF TEETH

The use of a mylar strip is recommended for interproximal separation and as a matrix. Etch the enamel surrounding the cavity including undercuts with enamel conditioner for 15-20 sec., wash and dry. Apply Bonding Agent (MerFill BOND is recommended) over the enamel margins and cure for 10 seconds. Place restorative material with a tapping movement and cure. In very deep cavities more than one layer may be required. Shape with appropriate finishing diamond or multi-fluted carbide burs, contour proximal surfaces with finishing strips. Check occlusion with a thin articulating paper, carefully adjust occlusion by removing material with a fine polishing diamond or stone. Finish with discs and rubber cups.

## •• RESTORATING OF POSTERIOR GROUPS OF TEETH

Place a mylar strip or matrix band for interproximal separation and fix it with wedges. Adapt the band to seal the gingival area to avoid overhangs.

**Note:** the matrix may be placed following the enamel etching if preferred. Apply Bonding Agent (MerFill BOND is recommended) over the enamel margins and cure for 10 seconds. To aid in adaptation, the first 1,5 mm layer of MerFill NANO may be placed and adapted to the proximal box. A condensing instrument can be used to adapt the material to all of the internal cavity aspects and cure it. The next portions of MerFill NANO may be placed in layers less than 2,5 mm. Cure each increment separately. Shape with appropriate finishing diamond or multi-fluted carbide burs, contour proximal surfaces with finishing strips.

## •• PHOTOPOLYMERIZATION OF MERFILL NANO

Use a unit for the polymerization intended for the materials containing camphoroquinone as the initiator, that is with a spectral maximum of radiation around 465 nanometers. The minimal power of unit should be not less than 550 mWatt/cm<sup>2</sup>, and the time of polymerization should be in the 20-30 sec range.

### •• Polymerization Depth for different MerFill NANO Shades (Typical LED Light Unit)

	Polymerization Depth	Polymerization Time
Translucent (incisal) shades	Less than 4,5 mm	20 - 30 sec
Universal dentin shades	Less than 3 mm	20 - 30 sec
Opaque shades	Less than 1 mm	20 - 30 sec

## •• CAUTIONS

MerFill NANO contains methacrylic resins that may cause an allergic reaction by skin contact in certain individuals. Avoid long or repeating contact of not-polymerized material with the skin (allergic contact dermatitis is possible), soft tissue of the oral cavity and eyes.

In case of contact, immediately wash thoroughly a place of contact with water and soap. If there is rash or other signs of allergic reactions on the skin stop use of the material and ask for medical care.

Use of this product in patients with known acrylic allergies is to be avoided.

## •• CONTRAINDICATIONS

Allergic reactions in the anamnesis of the patient especially on methacrylic resins or on any other component of dental materials.

## •• PRECAUTIONARY MEASURES

1. During the work with the material use special glasses, gloves, clothes and mask. Goggles are recommended for the patients also.
2. Observe the security measures provided during the work with powdery, siliceous substances. Use goggles, a mask and gloves.

## •• COLLATERAL REACTIONS

The product can cause irritation of eyes, skin and mucous membranes. (see. CAUTION section).

## •• INTERACTION WITH OTHER DENTAL MATERIALS

Use of eugenol-containing materials in a combination with MerFill NANO is contraindicated. Evgenol-containing dental materials can have negative impact on ability to a polymerization.

## •• WARRANTY

The manufacturer warrants the quality of manufactured products. The adverse events inflicted by violation of user manual, storage conditions and other events inflicted by non-stipulated usage of the material are not the subjects of warranty. The customer is responsible for determination of suitability of this product for user's application. Warranty conditions: the product does not comply with requirements declared by manufacturer. In this case the manufacturer replaces the defective material within warranty period.

## •• LIMITATION OF LIABILITY

The manufacturer's liability is limited by only cases stipulated by direct legislation of the country.

## •• STORAGE

- Inappropriate storage conditions will reduce shelf life and can lead to deterioration of properties of the material. Don't expose this product to direct sunlight. Store a material in a dry place.
- Store this product at the temperature of 4 - 25 °C (39.2 - 77 °F).
- DO NOT FREEZE!
- Shelf life of MerFill NANO is 3 years.

## •• RECYCLING

Dispose of the medical device in accordance with local / regional / national / international legal requirements.

## •• PACKING

MerFill NANO is packed in syringes on 4 g.

- Translucent (incisal) shades: I (Incisal - Enamel Normal), IOP (Incisal Opaline - Enamel White Opalescent);
- Universal dentin shades: A1, A2, A3, A3.5, A4, B1, B2, B3, C2, D3, UD (Universal Dentin), BW (Bleach White), XBW (Extra Bleach White);
- Opaque shades: OA2, OA3.

**For professional use in dentistry only!**

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