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**Identification Number: 230AABZX00066000**

Controlled Medical Device - Resin-based Dental Restorative Material

# TMR-Z Fill 10.

**[Indications]**

Direct anterior and posterior restoration (excluding root canal filling)

**[Contraindications and Prohibitions]**

·DO NOT USE THIS PRODUCT ON PATIENTS WHO HAVE A HISTORY OF ALLERGY SUCH AS IRRITATION TO THIS PRODUCT OR METHACRYLIC ACID AND SIMILAR ACIDS OR METHACRYLATE MONOMER.  
 ·DO NOT REUSE NEEDLE.

**[Shape, Composition and Description]**

This product consists of the following items and contains the ingredients below:

Type	State	Components	Inorganic Filler Content Rate
Universal	Paste	methacrylate monomer, inorganic fillers (silica, alumina, and zirconia: average particle diameter <math><20\mu\text{m}</math>), pigments, etc.	Approximately 55 vol%
Flow	Paste	methacrylate monomer, inorganic fillers (silica, alumina, and zirconia: average particle diameter <math><20\mu\text{m}</math>), pigments, etc.	Approximately 42 vol%
Low Flow	Paste	methacrylate monomer, inorganic fillers (silica, alumina, and zirconia: average particle diameter <math><20\mu\text{m}</math>), pigments, etc.	Approximately 45 vol%

Universal: 17 Shades: A1, A2, A3, A3.5, A4, A5, B1, B2, B3, C2, C3, D2, OA2, OA3, OW, BW, E  
 Flow: 14 Shades: A1, A2, A3, A3.5, A4, A5, OA2, OA3, OA3.5, OA4, OA5, OW, BW, E  
 Low Flow: 14 Shades: A1, A2, A3, A3.5, A4, A5, OA2, OA3, OA3.5, OA4, OA5, OW, BW, E

Accessory: needle tips

Principles: This material is Resin-based Dental Restorative Material and is cured by visible light.

**[Product Specifications]**

Test method: ISO 4049

It is applicable for the restoration of occlusal surface. The specification which is light cured inside mouth is applied.

Items	Specification
Depth of Cure	Opaque 1.0 mm and over Others 1.5 mm and over
X-ray contrast	Positive

**[Intended Use and Effect / Efficacy]**

This product is intended to be used for restoration of intraoral cavities and chipped/damaged teeth, except for pulp.  
 It is also intended to be used for repairing artificial crowns.

**[Instructions for Use]**

[ Materials for use in combination with this product]

Dental Adhesive for Coronal Dentine: e.g. “TMR-AQUA BOND 0” or “iGOS BOND”

[Dental Curing Lights]

## (1) Halogen Lamp

Dental curing light which has halogen lamps as a light source, and which emits an effective wavelength of 400-515 nm, and with light intensity of 400 mW/cm<sup>2</sup> and over.

## (2) LED Light-Curing

Dental curing light with blue LED as a light source; its emission spectrum peak top is 450-480 nm and it emits an effective wavelength of 400-515nm. The light intensity is 1000 mW/cm<sup>2</sup> and over.

[Cure time and Depth of Cure]

The cure time and the depth of cure are as given in the table.

The cure time needs to be adjusted depending on the amount of light and the wavelength of the light. When using this product under clinical conditions, please refer to the manual provided with the device you are using for information on appropriate light levels for curing. Also, please refer to the following table and confirm the cure time and the depth of cure depending on your curing unit before using this product for clinical cases :

**Cure Time and Depth of Cure**

Dental light curing unit (Light Intensity)	Cure Time	Shade and Depth of Cure	
		Opaque	Others
Halogen	20 sec. and over	1.0mm and over	1.5mm and over
LED whose light intensity is 1000 mW/cm <sup>2</sup> and over.	10 sec. and over		
LED whose light intensity is 2400 mW/cm <sup>2</sup> and over.	4 sec. and over		

Note: Opaque: OA2, OA3, OA3.5, OA4, OA5, OW

Note: It is recommended cure time is 20 sec. in case of using LED curing light which emits an effective wavelength of 400-515nm and the light intensity is less than 1000 mW/cm<sup>2</sup>.**[Instructions]**

## (1) Anterior and Posterior Restorations

## ① Cleaning of tooth surface

Remove plaque and clean the surface of the tooth where restoration is needed.

## ② Selecting a shade

Select a shade for the restoration using a shade guide.

## ③ Cavity Preparation

Remove dental caries and shape cavity in accordance with normal practice.

## ④ Exclusion of moisture and pulp protection

To prevent contamination with blood and saliva, exclude moisture with rubber dam. If cavity preparation is to be done significantly near to dental pulp exposure area, perform pulp capping procedure in accordance with normal practice.

## ⑤ Bonding treatment

Perform bonding treatment with dental adhesive for coronal dentine, following the instructions.

## ⑥ Filling and curing

Fill this product into the cavity and light cure following the “Cure Time and Depth of Cure” In cases where a cavity is deep, refer to the “Cure Time and Depth of Cure” and repeat filling and curing steps. In cases where Flow and Low Flow are used, cover the whole syringe with a protective cover such as plastic film to avoid contact with saliva and blood and to prevent cross infection.

When a needle tip is used, remove the syringe cap and attach a needle tip tightly.

## ⑦ Corrections and polishing

After curing, correct the shape in accordance with normal practice and polish with a silicone point or etc.

## (2) Repairing Crown Restoration and Fractured Composite Resin

## ① Preparing surface and coupling treatment by silane

Make the restoration surface rough with diamond points etc. and create a bevel at the margin area if needed.  
 Then prepare restoration area following the instructions for primer and bonding.

## ② Concealing Shade

In cases where concealing shade is needed, apply opaquer thinly and cure following the instructions for the opaquer.

## ③ Filling and curing

Take out this material and fill in the cavity or build-up, then cure with a curing light.

- ④ **Finishing and polishing**  
After curing, correct the shape in accordance with normal practice and polish with a silicone point or etc.

#### [N.B.: Technical Directions and Points for Attention]

- ① In cases where Flow and Low Flow are used, remove the syringe cap and attach a needle tip tightly.
- ② Cure time needs to be adjusted depending on the amount of light and the wavelength of the curing unit. When using this product under clinical conditions, refer to the manual provided with the device you are using for information on appropriate light levels for curing. Also, refer to the above table and confirm the cure time and the depth of cure depending on your curing unit before using this product for clinical cases.
- ③ Do not use surgical cotton wool which contains too much alcohol to remove this product from a needle tip or syringe. This causes alcohol to be inserted from the tip, and the material will be diluted inside of the syringe; the proper performance may not be exhibited. Squeeze off excess alcohol from the surgical cotton wool and then use it.
- ④ Refer to the "Cure Time and Depth of Cure" and confirm the cure time and the depth of cure depending on your curing unit before using this product.
- ⑤ In cases where a cavity is deep, refer to the "Cure Time and Depth of Cure" and repeat filling and curing steps.
- ⑥ Close the cap promptly and tightly after picking this product. In case of using Universal type, half-turn the handle in a counterclockwise direction to release residual pressure.
- ⑦ Since this product is cured by ambient light, it should be protected by a shade cover or used up quickly when this material is in use on a pallet or mixing paper.
- ⑧ Do not mix this product with other products, in order to prevent deterioration in quality of material properties.
- ⑨ In cases where Flow and Low Flow are used, be careful to prevent air bubbles being entrapped in the material, as this can easily happen.
- ⑩ If this product is stored in a refrigerator, leave this product at room temperature for several minutes before using it in order to prepare for use.
- ⑪ Depth of cure is affected by the irradiation capacity of the light curing unit; regular maintenance, such as cleaning and replacing lamps, is needed.
- ⑫ Since handling time of this product will be shortened by use of a shadowless lamp, turning off or light reduction of the lamp as required is necessary during filling and shaping.
- ⑬ In cases where Universal has not been used for a long time, tap the surface of the material to adjust the viscosity before use, since material in the tip of the syringe might be hard, due to thixotropy.

#### [Precautions]

- ① This product is a combustible solid. Do not use or leave this product in proximity to fire.
- ② Wear safety goggles to protect the eyes and do not look directly at the curing light during curing.
- ③ When polishing cured product, use a suction device and anti-dust mask as approved by your local public safety agency in order to avoid inhaling dust.
- ④ If cavity preparation is to be done significantly near to dental pulp exposure area, perform pulp capping procedure in accordance with normal practice.
- ⑤ Do not use eugenol or related products as it may hinder curing and bonding.
- ⑥ Handle carefully to prevent accidental ingestion of this material.
- ⑦ To prevent cross infection, do not use same needle tip and applicator for different patients and do not reuse them.
- ⑧ When using Flow or Low Flow, cover the whole syringe with plastic wrapping material to ensure saliva, blood, etc. does not adhere, to prevent cross-infection.
- ⑨ Do not use this product in combination with other products.
- ⑩ Do not use this product outside the scope of recommended indications, effects or efficacy.
- ⑪ Only adequately certified personnel should handle this product.

#### [Important Basic Cautions]

- ① Stop using this product immediately if any signs of allergy, such as irritation or rash, appear in patients. If symptoms persist, seek medical advice.
- ② Operators must discontinue use if any signs of irritation or rash appear. If symptoms persist, seek medical advice.
- ③ In order to avoid irritation, pay attention to prevent adhesion of this product to oral soft tissue or to skin. In case of oral soft tissue contact or skin contact, wipe with an alcohol-soaked cotton swab, and wash with plenty of water. In case of eye contact, immediately rinse out the eye with plenty of running water, and consult a physician.
- ④ Wear plastic gloves and safety goggles to prevent adhesion of this product to skin. In case of skin contact, wipe with an alcohol-soaked cotton swab, and wash with plenty of running water. In case of eye contact, immediately rinse out the eye with plenty of running water, and consult a physician.

#### [Other Cautions]

The restoration area may be stained and plaque-adherent depending on patients' dietary habits. Advise on daily oral cleaning.

#### [Handling and Storage]

- ① This product must be stored at a room temperature of 4-25°C.
- ② Do not store large quantities of product in the same storage area.
- ③ Equip work and storage areas with fire extinguishers.
- ④ Keep out of reach of personnel other than dental staff.

#### [Expiry Date]

- ① This product must be used before the expiry date\* printed on the package.
- ② The expiry date printed on the package is based on authentication by YAMAKIN.
- ③ The expiry date printed on the package refers to use expiry date.  
\*(e.g.: EXP YYYY-MM indicates YYYY 'year'/MM 'month' (last day) as the expiry date)

#### [Package]

[Single Package]

•Universal 3.8 g (2 ml): 17 Shades:

A1, A2, A3, A3.5, A4, A5, B1, B2, B3, C2, C3, D2, OA2, OA3, OW, BW, E

•Flow 2.6 g (1.5 ml): 14 Shades:

A1, A2, A3, A3.5, A4, A5, OA2, OA3, OA3.5, OA4, OA5, OW, BW, E  
Accessory: needle tips x 10/ Shade

•Low Flow 2.6 g (1.5 ml): 14 Shades

A1, A2, A3, A3.5, A4, A5, OA2, OA3, OA3.5, OA4, OA5, OW, BW, E  
Accessory: needle tips x 10/ Shade

[Set Package]

- Standard Pack (Universal: A1, A2, A3, E)
- Standard Pack (Flow: A1, A2, A3, E)
- Standard Pack (Low Flow: A1, A2, A3, E)
- 2 pcs Pack (Universal): A2, A3
- 2 pcs Pack (Flow): A2, A3
- 2 pcs Pack (Low Flow): A2, A3
- 3 pcs Pack (Universal) (3pcs. of the Same Shade): A2, A3, A3.5
- 3 pcs Pack (Flow) (3pcs. of the Same Shade): A2, A3, A3.5
- 3 pcs Pack (Low Flow) (3pcs. of the Same Shade): A2, A3, A3.5

[Accessory/ Single Item]

•Needle tips: x 20 pcs.

