

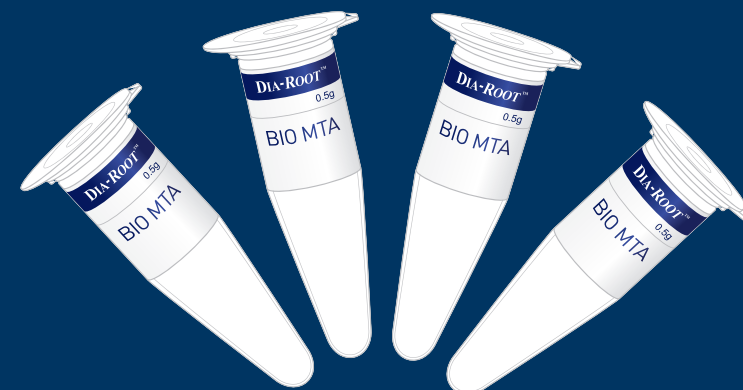
# DIA-ROOT™ BIO MTA

MTA Root Canal Repair Material



## FEATURES & BENEFITS

- Excellent biocompatibility
- Outstanding sealing capability
- White powder is ideal for anterior teeth
- Highly antibacterial with high alkaline pH (12)
- Easy handling properties
- Washout resistant
- Setting time: approx. 45 minutes



## ORDER NUMBER

Item #1003-601

Content:

- MTA Powder 0.5g
- 1 x Mixing Pad
- 1 x Spatula

DIA-ROOT BIO MTA is a root repair material with excellent biocompatibility and offers distinct advantages for root canal repair procedures. It can quickly and efficiently restore and repair the damaged areas of the root canal. DIA-ROOT BIO MTA does not have any adverse side effect on micro-circulation of the connective tissue. Its excellent bio-active properties promote tissue healing.

## INDICATIONS

### ► PULP CAPPING:

When applied on the pulpal site, DIA-ROOT BIO MTA creates a biocompatible seal of the pulp. It has very low solubility, so it maintains a hard and excellent marginal seal. It prevents bacterial leakage while maintaining a high level of biocompatibility. It stimulates dentin bridge formation adjacent to dental pulp.

### ► REPAIR OF ROOT PERFORATION:

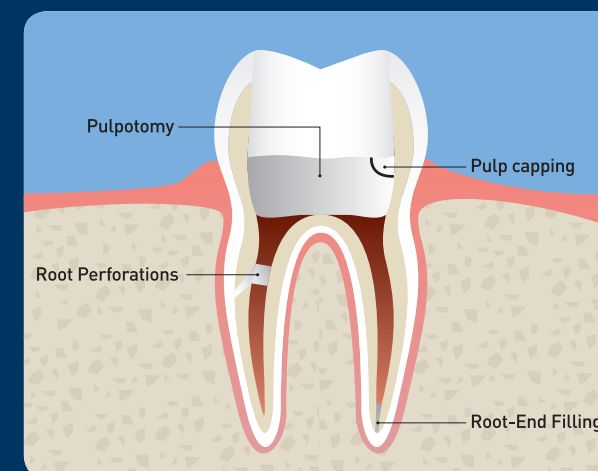
Ideal treatment for root perforation and iatrogenic furcal perforation.

### ► PULPOTOMY:

DIA-ROOT BIO MTA creates a biocompatible seal and prevents the dental pulp from necrosis. It restores and protects the pulp from infection.

### ► ROOT-END FILLING

DIA-ROOT BIO MTA has excellent sealing ability, an antimicrobial effect, and promotes osteoblast activity to prevent irritants in the root canal to extrude into periradicular tissues. It is non-toxic and well-tolerated by periapical tissues and able to regenerate periapical tissue.



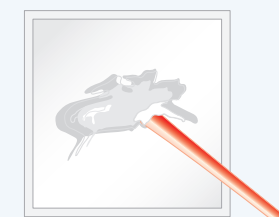
## MIXING INSTRUCTIONS

01 Step



01 Pour out the powder from the capsule and mix it with distilled water on the mixing pad. (Mixing ratio: 0.5 g powder / 0.225 g water)

02 Step



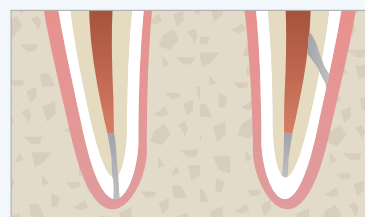
02 Mix distilled water into the powder for about 30 seconds until all the particles are hydrated forming a thick paste-like mixture. Add distilled water if the mixture hardens or dries out.

03 Step



03 Place the mixed paste into a carrier of your choice.

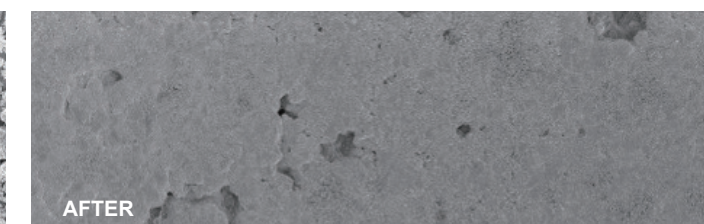
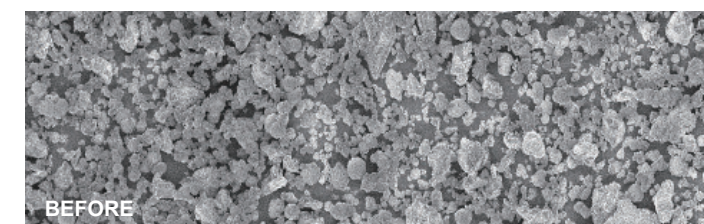
04 Step



04 Dispense the mixed paste into the treatment site.

## SEM IMAGES

SEM images show outstanding sealing ability of DIA-ROOT BIO MTA after hydration.



## CONTACT

DiaDent Group International Inc. (USA & Canada)

11 - 3871 North Fraser Way, Burnaby, BC, Canada V5J 5G6

Tel 604-451-8851 Fax 604-451-8865 Email [diadent@diadent.com](mailto:diadent@diadent.com)

DiaDent Group International (Korea & International)

16, Osongsaengmyeong 4-ro, Osong-eup, Heungdeok-gu,

Cheongju-si, Chungcheong buk-do, 28161, South Korea

Tel 82-43-266-2315 Fax 82-43-262-8658 Email [diadent@diadent.co.kr](mailto:diadent@diadent.co.kr)

DiaDent Europe B.V (Europe)

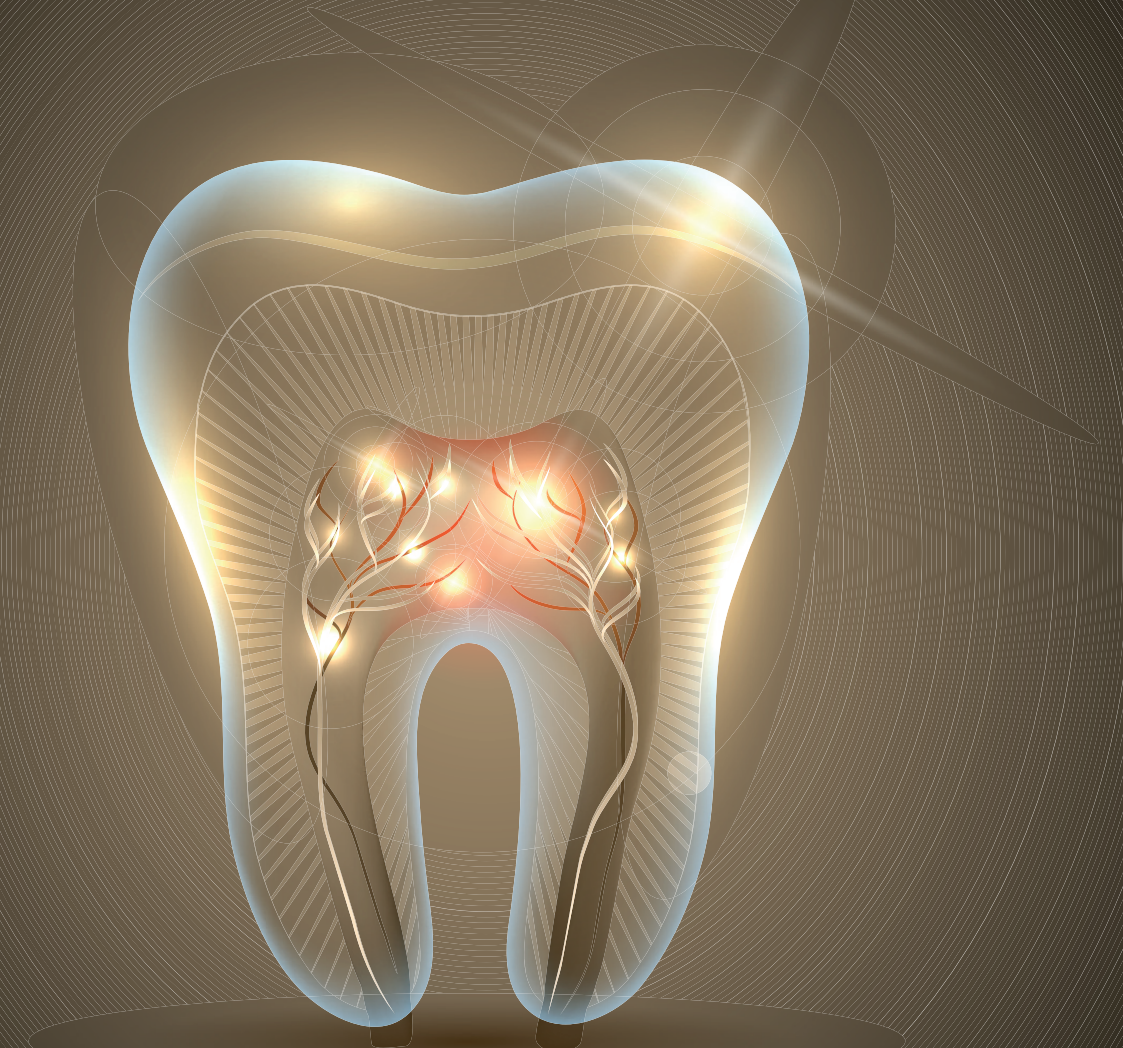
Antennestraat 70, 1322 AS Almere, the Netherlands

Tel 31-36-549-8607 Fax 31-36-536-7317 Email [diadent@diadenturope.com](mailto:diadent@diadenturope.com)

# DiaDent

DiaDent Group International

[www.diadent.com](http://www.diadent.com)



BIOCOMPATIBLE

SUPERIOR BONDING

ANTIBACTERIAL

REGENERATIVE

# DIA-ROOT™

## BIO SEALER & BIO MTA

# DIA-ROOT™ BIO SEALER

BioCeramic Root Canal Sealer



22mm  
 19µm  
 0.95%  
 8.1mm  
 Flow    Film thickness    Solubility    Radiopacity

## ORDER NUMBER

Item #1003-701  
 Regular Kit Content:  
 • 1 x 2g syringe  
 • 20 disposable tips  
 • 1 x silicone cap

Item #1003-702  
 Intro Kit Content:  
 • 1 x 0.5g syringe  
 • 4 disposable tips  
 • 1 x silicone cap

DIA-ROOT BIO Sealer is a pre-mixed bioceramic calcium silicate-based MTA sealer. Its non-shrinking feature and strong bonding ability make it the perfect sealer for permanent obturation and suitable for all obturation techniques with gutta percha.

## FEATURES & BENEFITS

### ► High Biocompatibility:

- Heals tissue with minimal inflammatory reaction
- Releases calcium ions (calcium hydroxide) and helps bone and tissue regeneration
- Forms calcium silicate hydrate that improves the sealing ability over time

### ► Excellent Sealing Ability:

- Zero shrinkage
- Superior adhesion strength to dentin and gutta percha than traditional root canal sealer

### ► Low Solubility:

- Low solubility (0.95%) to maintain an excellent seal inside the root canal
- Washout resistant to prevent micro-leakage

### ► Optimal Flowability:

- High flow rate of 22mm
- Low film thickness of 19µm
- Effectively flows into and kills microbes throughout all aspects of the root canal system

### ► Pre-Mixed and Pre-Filled Syringe:

- Ready-to-use formula, no mixing required
- User friendly, convenient, and saves time
- Setting time is 6 hours (depending on the condition of the root canal)

### ► Easy to Store:

- Can be stored over 6 months after use
- Does not harden easily
- Reduces waste of material to a minimum

## BIOCOMPATIBILITY

- Minimizes the possibility of inflammation
- Enhances osteoblastic differentiation
- Passing all toxicity tests
- Hydrophilic and sets in contact with moisture

## Tests:

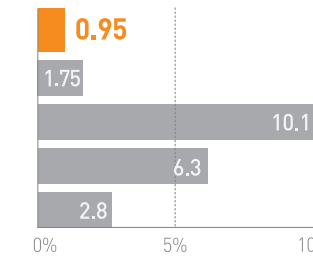
- ✓ Cytotoxicity
- ✓ Pyrogen test
- ✓ Sensitization test
- ✓ Oral mucosal irritation test
- ✓ Acute systemic toxicity test

## SUPERIOR BONDING

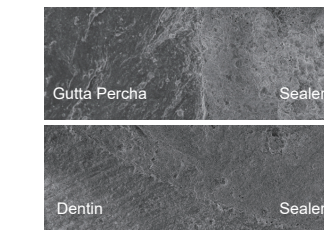
- Superior bonding to the dentin and gutta percha reduces the possibility of micro-leakage and reinfection of the root canal

DIA-ROOT BIO SEALER

## Solubility



## Excellent Adhesion

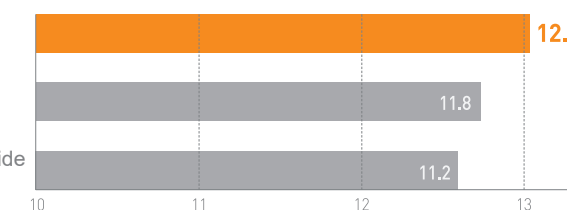


## HIGHLY ANTIBACTERIAL

- High alkaline pH (12) is highly antibacterial
- High antimicrobial activity helps to decrease or prevent the growth of micro-organisms and aid the repair process of apical and periapical tissues.

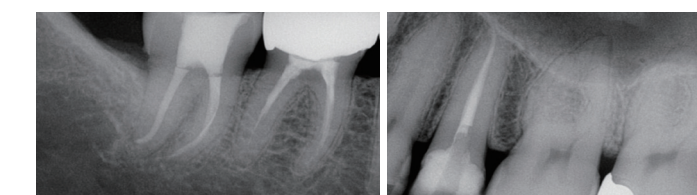
DIA-ROOT BIO SEALER

## pH Test



## HIGHLY RADIOPAQUE 8.1mm AI

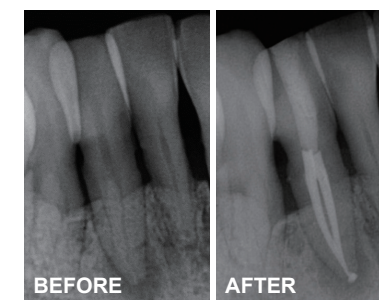
## Radiopacity



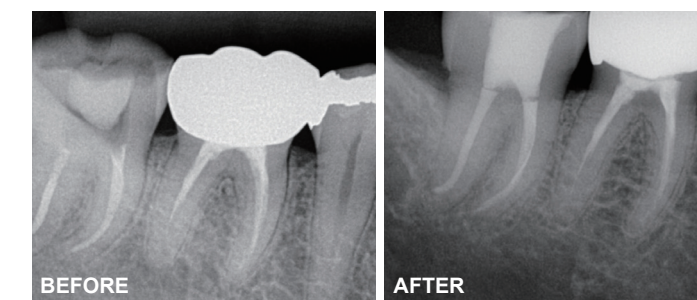
## CLINICAL CASES

### Complete sealing without tissue irritations.

#### Case 1



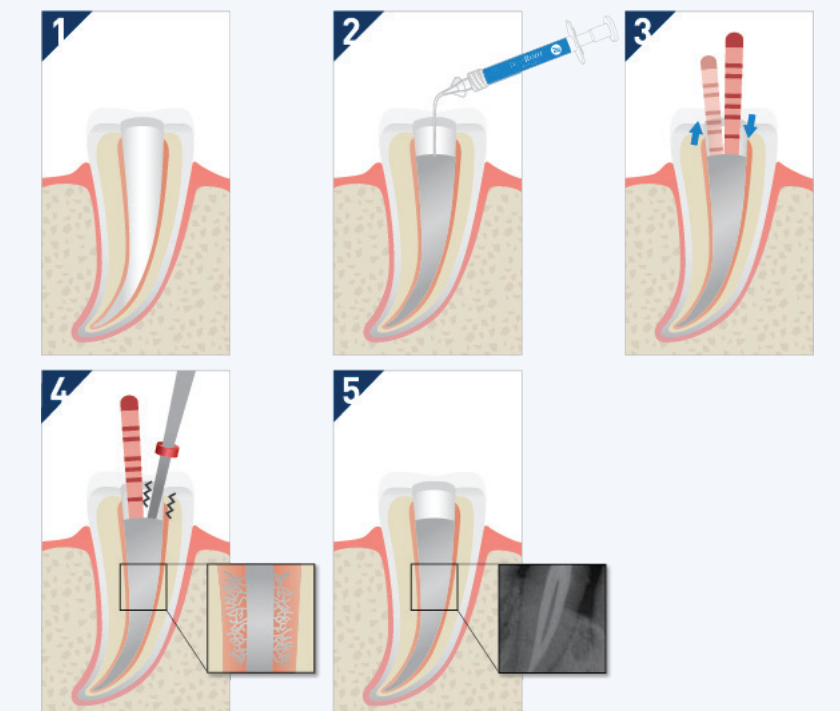
#### Case 2



## TECHNIQUE GUIDE

### SINGLE CONE TECHNIQUE

- 1 Prepare and irrigate the root canal using standard endodontic techniques.
- 2 Fill the root canal slowly with DIA-ROOT BIO SEALER to the coronal third of the canal.
- 3 Insert the selected gutta percha cone and lightly pump the gutta percha cone up and down the root canal to fill up the apex.
- 4 Cut the master cone at the desired level with DUO-PEN and remove the excess sealer from the root canal.
- 5 Complete root canal treatment.



### TRADITIONAL TECHNIQUE WITH ROOT CANAL OBTURATION DEVICE

- 1 Prepare and irrigate the root canal using standard endodontic techniques.
- 2 Fill the root canal slowly with DIA-ROOT BIO SEALER to the coronal third of the canal.
- 3 Insert the selected gutta percha cone and lightly pump the gutta percha cone up and down the root canal to fill up the apex.
- 4 Cut the master cone at the desired level with DUO-PEN.
- 5 Condense the gutta percha cone with DUO-PEN and extrude melted gutta percha and fill the canal with DUO-GUN.
- 6 Complete root canal treatment.

