META DENTAL
YOUR GUARANTEE OF QUALITY

Endodontic Series

META

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Cordless Gutta Percha Obturation Systems

**Unique Benefits**

- New Slim design allows better control and excellent tactile feedback.
- Easy to Master 3-dimenstional filling technique.
- Excellent apical control and obturation of anatomically complicated canals.
- Low voltage enables safe operation.
- Extra standby battery offers instant power when needed.
**Gutta Percha Obturation**

Maxillary right central incisor, after apexification

Mandibular left 1st molar, after transplantation, C-shape

Maxillary right 2nd premolar, 3 canals with post

Mandibular left 1st molar, mesial 4 orifices

Mandibular left 1st molar, ‘S’ curved dentilingsual canal

Mandibular left 2nd molar, C-shape canal

Maxillary right 1st molar, mesiobuccal curved canal

Mandibular left 1st molar, 4 canals

Mandibular right 2nd molar, mesial lateral canal, distal hook shape
Combination Technique with Gun & Pen

1. Fit a master apical cone that matches the taper of the canal being obturated and check for tug back.

2. Select appropriate Pen tip. Pre-fit the tip 4~6mm short of the working length and adjust the stopper to mark reference point.

3. Coat the master cone with sealer and insert into canal. Cut the excess gutta percha over the orifice using the Pen. Obturate 4~6mm short of the apex.

4. Apply pressure on the melted gutta percha until it hardens. Apply heat to separate Pen from gutta percha. Now Apical & accessory canals are perfectly obturated.

5. After inserting the Gun needle into the Root Canal, wait for 5 seconds.

6. Pull the trigger slowly and backfill with warm gutta percha. Allow the warm gutta percha to bring the needle up from the canal.

7. Downpack warm gutta percha with cold pluggers. Apply pressure with a larger plugger.

8. The root canal is fully obturated 3-dimensionally.
Components

Pen Set

Master Pen
Master Charger & Battery
Pen Tips
Gutta Percha (04, 06 Taper)

Gun Set

Master Gun
Master Charger & Battery
Gun Needles
Gutta Percha Bars
Heat Insulator
Accessory Tools

Reorder Parts

Master Battery
Pen Tips (XF, FM, ML)
Gun Needles (20, 23, 25g)
Gutta Perchas

Specification

<table>
<thead>
<tr>
<th></th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Charger</td>
<td></td>
<td>100V~240V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DC 9V 1.8A</td>
</tr>
<tr>
<td>Master Gun</td>
<td>Heater</td>
<td>DC 3.6V 8W</td>
</tr>
<tr>
<td></td>
<td>Heating Time</td>
<td>2 Minutes</td>
</tr>
<tr>
<td>Master Pen</td>
<td>Heating Time</td>
<td>1 Second</td>
</tr>
<tr>
<td>Operating Time</td>
<td>Gun</td>
<td>Continuous for 2 hours</td>
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<tr>
<td></td>
<td>Pen</td>
<td>Continuous for 1.5 hours</td>
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<tr>
<td>Master Battery</td>
<td>Li-ion</td>
<td>ICR18650-26 (Samsung SDI)</td>
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<tr>
<td></td>
<td></td>
<td>3.6V 2,600mA</td>
</tr>
</tbody>
</table>
Cordless Gutta Percha Obturation System

**Advantages:**
- Easy & Quick obturation
- Accurate and predictable filling
- Excellent apical control to achieve 3-dimensional hermetic sealing
- Two independent and efficient cordless units
- Mobility without limitation from wall sockets
- No more tangled and straightening cords during operation
- Lowest prices from the replacement parts

**Downpack with E&Q Pen**

1. Fit a master apical cone that matches the taper of the canal being obturated and check for tug back.

2. Select appropriate Pen tip. Pre-fit the tip 4~6mm short of the working length and adjust the stopper to mark reference point.

3. Coat the master cone with sealer and insert into canal. Cut the excess gutta percha over the orifice using the Pen. Obturate 4~6mm short of the apex.

4. Apply pressure on the melted gutta percha until it hardens. Apply heat to separate Pen from gutta percha. Now Apical & accessory canals are perfectly obturated.
Backfill with E&Q Gun

5. After inserting the Gun needle into the Root Canal, wait for 5 seconds. Pull the trigger slowly and backfill with warm gutta percha. Allow the warm gutta percha to bring the needle up from the canal.

6. Downpack warm gutta percha with cold pluggers. Apply pressure with a larger plugger. The root canal is fully obturated 3-dimensionally.

Specifications:

| 1) E&Q Charger | 1. Input  | 100V ~ 240V |
|                | 2. Output | DC 9V, 1.8A |
| 2) E&Q Gun     | 1. Heater | DC 3.6V, 8W |
|                | 2. Temperature Sensor | J-Type |
|                | 3. Heating Time | 2 Minutes |
| 3) E&Q Pen     | 1. Temperature Sensor | K-Type |
|                | 2. Heating Time | 1 Second |
| 4) Operating Time | 1. Gun | Continuous for 1 hour |
|                | 2. Pen | Continuous for 30min |
| 5) E&Q Battery (Ni-MH Type) | 1. Pen | 2/3AA x 3EA |
|                | 2. Gun | DC 3.6V, Max 4.5V |
|                |  | 4/5A x 3EA |
|                |  | DC 3.6V, Max 4.5V |

Components:
Gutta Percha Points

Made from the Finest Gutta Percha Uniformly Hand Rolled

- Combination of stiff and flexible properties provide ideal working qualities
- Uniform and non-distorting crimp
- Excellent radiopacity
- Long shelf life and freshness assured
- Suitable for vertical and lateral condensation
- Variety in the selection of sizes and packaging available

Special Length Marked Gutta Points

For Accurate Depth Measurement and Insertion (Patent Pending)

- Uniform and non-distorting crimp
- Variable sizes and packages available
- Non-Standardized (Accessory Sizes)
- Accurate insertion of the working length
- No need to mark working length on the points (Assurance of the accurate insertion after filling)
- Time saving with safe, easy and fast filling
- Variety in the selection of sizes and packaging available
Available Packaging:

Spill proof (6 Compartment Dispenser)

- Packaging Code: P.21
- Points: 120 points
- Order Code: GPCB
- L x W x H: 80x51x16(mm)
- Color Coded: Yes
- Length Marked: No
- Sizes: Standard & Non Standard

Vials (6 Round Vials)

- Packaging Code: P.31
- Points: 120 points
- Order Code: GPCV
- L x W x H: 80x51x16(mm)
- Color Coded: Yes
- Length Marked: No
- Sizes: Standard & Non Standard

.04 Taper Gutta Percha

- Packaging Code: P.21
- Points: 60 points
- Order Code: GP04
- L x W x H: 80x51x16(mm)
- Color Coded: Yes
- Length Marked: Yes
- Sizes: ISO #15 - 80

.06 Taper Gutta Percha

- Packaging Code: P.21
- Points: 60 points
- Order Code: GP06
- L x W x H: 80x51x16(mm)
- Color Coded: Yes
- Length Marked: Yes
- Sizes: ISO #15 - 80

Endo Organizer (Spill proof 12 Compartments)

- Packaging Code: P.11
- Points: 240 points
- Order Code: ENDOP
- L x W x H: 110x110x30(mm)
- Color Coded: Yes
- Length Marked: No
- Sizes: ISO #15/40 (assorted only) ISO #15/80 (assorted only)

Available Sizes:

<table>
<thead>
<tr>
<th>ISO STANDARD</th>
<th>NON-STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
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<td>#20</td>
<td>Fine-Medium</td>
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<tr>
<td></td>
<td>15/40</td>
</tr>
<tr>
<td></td>
<td>45/80</td>
</tr>
<tr>
<td></td>
<td>Assorted (XF-M)</td>
</tr>
</tbody>
</table>
Absorbent Paperpoints

Hand Rolled for Extra Absorbency
✓ Rigid enough to insert in canals without curling or bending
✓ Rolled firmly to hold shape when withdrawn from the canal
✓ Highly absorbent
✓ Sterilized individual packages
✓ Variety sizes and packages available

Available Sizes

<table>
<thead>
<tr>
<th>ISO STANDARD</th>
<th>NON-STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>XX-Fine</td>
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<td>#10</td>
<td>X-Fine</td>
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<tr>
<td>#15</td>
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<td>#20</td>
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<tr>
<td>#40</td>
<td>45/80</td>
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<tr>
<td>#45</td>
<td>Assorted (XXF – XC)</td>
</tr>
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<td>#50</td>
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</tbody>
</table>
### Available Packaging

#### Spill proof (6 Compartment Dispenser)
- **Packaging Code:** P.21  
- **Points:** 200 points  
- **Order Code:** PPCB  
- **L x W x H:** 84x51x13(mm)  
- **Color Code:** Yes  
- **Sizes:** Standard & Non-Standard

#### Vials (6 Round Vials)
- **Packaging Code:** P.31  
- **Points:** 200 points  
- **Order Code:** PPCV  
- **L x W x H:** 84x51x16(mm)  
- **Color Code:** Yes  
- **Sizes:** Standard & Non-Standard

#### .04 Taper (Spill proof 6 Compartments)
- **Packaging Code:** P.21  
- **Points:** 60 points  
- **Order Code:** PP04  
- **L x W x H:** 84x51x16(mm)  
- **Color Code:** Yes  
- **Sizes:** ISO #15 - 80

#### .06 Taper (Spill proof 6 Compartments)
- **Packaging Code:** P.21  
- **Points:** 60 points  
- **Order Code:** PP06  
- **L x W x H:** 84x51x16(mm)  
- **Color Code:** Yes  
- **Sizes:** ISO #15 - 80

#### Cell Pack 180
- **Packaging Code:** P.61  
- **Points:** 180 points  
- **Order Code:** PP180  
- **L x W x H:** 120x54x12(mm)  
- **Color Code:** No  
- **Sizes:** Non-Standard

#### Cell Pack 200
- **Packaging Code:** P.61  
- **Points:** 200 points  
- **Order Code:** PP200  
- **L x W x H:** 162x54x11(mm)  
- **Color Code:** No  
- **Sizes:** Standard & Non-Standard

#### Endo Organizer (Spill proof 12 Compartments)
- **Packaging Code:** P.11  
- **Points:** 480 points  
- **Order Code:** ENDOPP  
- **L x W x H:** 110x110x30(mm)  
- **Color Code:** Yes  
- **Sizes:** ISO #15/40 (assorted only)  
  ISO #15/80 (assorted only)
Calcium Hydroxide with Iodoform
Root Canal Filling Material with Excellent Radiopacity

Applications:
- Apexification
- Exposed pulp in pulp capping and pulpotomy
- Leaking canal
- Root canal filling

Advantages:
- Excellent antibacterial effect and radiopacity
- Premixed paste
- Syringe type for easy delivery of the paste directly the canal
- Disposable tips for prevention of cross-contamination

Components:
- 2.2g paste in a syringe
- 20 disposable tips
- One ring rotator for direction control of the tip
- Dimension: 228x61x22(mm)
- Weight: 83g
Clinical Cases

Apexification

Pulp necrosis on #21 of an 8 year-old boy took place by trauma.

Root Resorption

About 1 year after Metapex treatment

Internal resorption on disto-lingual root

Root perforation by inflammatory resorption

Directions:

1. After root canal preparation, clean and dry the canal.

2. Use the ring rotator for easy re-direction of the tip.

3. Insert the tip into the canal.

4. Fill the canal completely by pushing the syringe plunger while slowly withdrawing the tip.

5. Remove excess paste with a sterilized cotton pellet.

6. Discard the used tip, fix a new one and secure its placement with the use of the ring rotator.

Cautions:

✔ Do not overfill beyond the apex.
✔ Avoid direct exposure to sunlight.
✔ Keep the syringe capped all the time.
✔ Store in dry and cool area (10°C ~ 25°C / 50°F ~ 77°F).

Improper storage can cause dryness or separation of the paste.

Shelf Life:

✔ Two years from the production date.
MetaPaste

Calcium Hydroxide with Barium Sulfate
Temporary Root Canal Filling Material

Applications:
- Apexification
- Pulp capping and pulpotomy
- Leaking canal
- Temporary root canal filling
- Internal & external root resorption

Advantages:
- Easy cleaning and removing with good water solubility
- Excellent antibacterial effect and radiopacity
- Premixed paste
- Syringe type for easy delivery of the paste into the canal
- Disposable tips for prevention of cross-contamination

Components:
- 2.2g paste in a syringe
- Disposable tips
- One ring rotator for direction control of the tip
- Dimension: 228 × 61 × 22 (mm)
- Weight: 83g
Clinical Cases

Apexification:

Before treatment
- Large apical foramen with an incomplete apex
- Note the root resorption on the lateral surface of the apical third

Metapaste filling

Three months later
- After removal of the paste, it shows a formation of the apical barrier

Six months later
- Excellent healing without further root resorption

To locate real apical foramen:
- About 1-2 months after, X-ray shows exactly where the real apical foramen is.

Caution:
- Do not overfill beyond the apex.
- Avoid direct exposure to sunlight.
- Keep the syringe capped at all times.
- Store in dry and cool area (10°C ~ 25°C / 50°F ~ 77°F).
  Improper storage can cause dryness or separation of the paste.

Shelf Life
- Two years from the production date.
Resin-based root canal sealer

Advantages
- Excellent biocompatibility
- Easy to dispense & mix
- Hermetic sealing ability
- Non-staining to the teeth
- Insoluble in tissue fluids
- Good radiopacity

Material Properties
- Working Time: 35 Minutes at 23°C (73°F)
- Setting Time: 45 Minutes at 37°C (99°F)
- Flowability: 44mm
- Film Thickness: 3.3μm
- Radiopacity: 5.44mm/mmAL
- Solubility: 0.0324%
**Biocompatibility:**

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cytotoxicity (ISO 10993-5)</td>
<td>Agar Diffusion - Freshly mixed - Set material</td>
</tr>
<tr>
<td>Irritation (ISO 10993-10)</td>
<td>Oral</td>
</tr>
<tr>
<td>Systemic toxicity (ISO 10993-11)</td>
<td>Acute</td>
</tr>
<tr>
<td>Implantation (ISO 10993-6)</td>
<td></td>
</tr>
</tbody>
</table>

**Components:**
- 13.5 g dual syringe (Base 9g, Catalyst 4.5g)
- 1 Spatula
- 1 Mixing Plate
- 1 Direction for use
- Dimension: 80 × 200 × 43 (?
- Weight: 135g

**Storage**
- Keep the syringe capped after use
- Store at 18°C ~ 24°C (64°F ~ 75°F)
- Avoid UV light

**Shelf Life**
- Two years from production date.
19% EDTA Cream
Root Canal Cleaning and Shaping and Smear Layer Removal

Applications:
- Root canal preparation with files and reamers
- Presence of calcifications in the canal
- Narrow canals in posterior teeth
- Smear layer removal

Advantages:
- Removal of inorganic substances by chelating (EDTA-Ca$^{2+}$)
- Easier filing with lubricating action
- Produces the cleanest canal wall after smear layer removal

Components:
- MD-ChelCream 5.4 mL × 2
- 10 Disposable tips
- Dimension: 195 × 70 × 30 (mm)
- Weight: 72g

Directions:
1. Deposit small amount in the canal orifice using the MD-ChelCream syringe.
2. Carefully pump into the canal with a fine file or reamer.
3. Re-apply MD-ChelCream when necessary or until cleaning and shaping is complete.
4. Rinse out MD-ChelCream by irrigation with sodium hypochlorite.

Cautions:
- Use MD-ChelCream with discretion to prevent perforation
- Avoid extrusion of the MD-ChelCream into the apex
- Keep the syringe capped all the time
- Store in temperature 10°C ~ 25°C (50°F ~ 77°F)

Shelf Life:
- Two years from the production date.
17% EDTA Solution
Excellent Cleaning, Shaping and Smear Layer Removal by Chelating Effect

Applications:
- Presence of calcification in the canal
- Narrow canals on posterior teeth
- Smear layer removal

Advantages:
- Removal of inorganic substances by chelating (EDTA-Ca^{2+})
- Easier instrumentation by softening dentin canal wall
- Produces the cleanest dentinal walls after smear layer removal

Components
- MD-Cleanser: 100 mL
- 1 1cc syringe
- 2 Disposable tips
- Dimension: 50 × 115 × 55 (mm)
- Weight: 138g

Application Case:

Application Method
After root canal preparation
After MD-Cleanser application (x1000)
After MD-Cleanser application (x7000)

Shelf Life:
- Two years from the production date.
Hydraulic Temporary Restorative

**Advantages:**
- Easy application and removal
- Hermetically seals the cavity
- Excellent stability when set
- Proper crush strength

**Components:**
- 40g White paste in a jar
- Box size: 38 × 41 × 39(mm)
- Weight: 55g

**Directions:**
1. Dry the prepared cavity.
2. Transfer the amounts of MD-Temp required to the cavity by using a suitable instrument.
3. Let the patient bite down on the filling to check for interferences in case of class 1 cavities. Otherwise, be sure to adapt the filling into the cavity walls by contouring it.
4. Remove excess by wiping it off with moist cotton towards the margins of the cavity.
5. As complete setting takes place after an hour, instruct the patient to avoid pressure or abrasion until such time.

**Shelf Life:**
- Two years from the production date.
Pre-bent Disposable Tips

- Pre-bent disposable plastic tips
- Prevents contamination
- Easy to use
- Reorder Tips for: Metapaste, Metapex, ChelCream, and Cleanser Syringes. Other products may vary.
- Quantity: 100pcs/bag