Meta Biomed, founded in 1990, is the premier endodontic and restorative supplies and one of the most renowned dental and suture suppliers in Korea. During the past decade, Meta Biomed has reshaped the domestic dental care landscape. With a period of rapid growth, Meta Biomed created a genuinely integrated dental care and suture supplies and aggressively recruited superb researchers to develop internationally renowned supplier in endodontics, dental devices, suture materials and bone graft substitutes.

Meta Biomed’s standing as one of the nation’s outstanding dental and suture suppliers is a source of civic pride. The region benefits from Meta Biomed’s many charitable contributions and its broad array of community-based programs.

A passion for innovation lies at the heart of Meta Biomed’s success. Through such innovation, it has already launched a portfolio of new business in antibacterial suture materials, bone filler, bone cement, joint stem-cell development, hernia mesh and neural canal.

With a culture that embraces change and encourages innovation, Meta Biomed strives for excellence in everything we do and believe that each member of the staff is responsible for the continuous improvement of quality in all aspects of the services we provide.

Meta Biomed is committed to understanding and satisfying the expectations and requirements of our customers as our vision “Envision the Future” with Diamond Quality, Gold Service and Silver Price.

CEO.  Tony Oh
Dental Product’s General Catalogue
World Wide Marketing Department, Dental Business Group

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/ Dental Equipments

ENVISION THE FUTURE
## Dental Materials

Meta Biomed Product Program 2009/2010

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Gutta Percha Points
Special Taper Points
.04, .06, .08 Taper Gutta Percha Points

Time saving with easy filling
For faster and easier root canal obturation
Variable tapers & sizes
Length marking available

- Excellent radiopacity
- Long shelf life and freshness assured
- Suitable for vertical and lateral condensation

Available Sizes
- .04 Taper: 15 - 90
- .06 Taper: 15 - 80
- .08 Taper: 15 - 40

Length Marked | Patent No.: US 7097454
For Accurate Depth Measurement and Insertion

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 Sizes
- ISO sizes: 8, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 140
- Non-Standardized (Accessory sizes): XF, FF, MF, F, FM, M, ML, L, XL
- Special Taper Points: .04, .06, .08
Dental Materials

Regular
Made from the Finest Gutta Percha, Uniformly Hand Rolled

- Stiff but flexible to 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

Available Sizes

<table>
<thead>
<tr>
<th>ISO Standardized</th>
<th>Non-Standardized (Accessory Sizes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>X-Fine, Fine-Fine,</td>
</tr>
<tr>
<td>10</td>
<td>Medium-Fine, Fine,</td>
</tr>
<tr>
<td>15</td>
<td>Fine-Medium, Medium,</td>
</tr>
<tr>
<td>20</td>
<td>Medium-Large, Large,</td>
</tr>
<tr>
<td>25</td>
<td>X-Large</td>
</tr>
</tbody>
</table>

Asst. 15/40, 45/80

- Any size assortment is available.

Special
Japanese, De Trey Type & ENDO Organizer

Japanese & De Trey Type Gutta Percha Points

- Point: 100 Points / Box
- Size: - Japanese Type
  - De Trey Type
  - XX-F, X-F, Fine, Medium

Endo Organizer

- Code: P11
- Spill Proof 12 Compartments
- Size: ISO 15 - 80
- Color Coded Available
- 240 Points
Available Packaging

6 Compartment Dispenser
- **Code**: P.21
- **Regular Packing Points**: 120 Points
- **Dimension**: 84×51×13 ( TCHAR )

6 Vial Packing (Round)
- **Code**: P.31
- **Regular Packing Points**: 120 Points
- **Dimension**: 84×51×16 ( TCHAR )

6 Vial Packing (Square)
- **Code**: P.31
- **Regular Packing Points**: 120 Points
- **Dimension**: 84×51×16 ( TCHAR )

4 Compartment Dispenser
- **Code**: P.51
- **Regular Packing Points**: 100 Points
- **Dimension**: 77×45×13 ( TCHAR )

- Private labels are available in all packages.

Sliding Type Dispenser
- **Code**: P.71
- **Regular Packing Points**: 120 Points
- **Dimension**: 70×45×12 ( TCHAR )
Absorbent Paper Points

Sterilized
Hand Rolled for Extra Absorbency

- Highly absorbent
- Sterilized individual packages
- Variety sizes and packages available
- Color Coded

Available Sizes

<table>
<thead>
<tr>
<th>TYPE</th>
<th>SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized (ISO Specifications)</td>
<td>8, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 140</td>
</tr>
<tr>
<td>Non-Standardized (Accessory Sizes)</td>
<td>XX-Fine, X-Fine, Fine, Medium, Coarse, X-Coarse</td>
</tr>
<tr>
<td>Special Taper (04, 06, 08)</td>
<td>15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80</td>
</tr>
</tbody>
</table>

6 Compartment Dispenser

- Code: P21
- Regular Packing Points: 180/200 Points
- Dimension: 84x51x13

Available Packaging

Sliding Type Dispenser

- Code: P71
- Regular Packing Points: 180/200 Points
- Dimension: 70x45x12

6 Vial Packing (Square)

- Code: P31
- Regular Packing Points: 180/200 Points
- Dimension: 84x51x16

6 Vial Packing (Round)

- Code: P31
- Regular Packing Points: 180/200 Points
- Dimension: 84x51x16

4 Compartment Dispenser

- Code: P51
- Regular Packing Points: 200 Points
- Dimension: 77x45x13

Blister Cell

- Code: P61
- Regular Packing Points: 180/200 Points
- Dimension: 163x54x11

Private labels are available in all packages.
Metapex
Calcium Hydroxide with Iodoform
Temporary Root Canal Filling Material with Excellent Radiopacity

Applications
- Weeping canal
- Formation of a hard tissue barrier (Apexification)
- Root canal filling for deciduous teeth
- Internal & external root resorption

Composition
- Calcium Hydroxide, Iodoform, Silicon oil

Advantages
- 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 (2 syringe packing available)
- Disposable tips
- One ring rotator for direction control of the tip
- Dimension: 228x61x22
- Weight: 83g

Shelf life
- Two years from the production date.

Clinical Cases

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

Root Resorption
Internal resorption on disto-lingual root
Root perforation by inflammatory resorption
Metapaste
Calcium Hydroxide with Barium Sulfate
Water Soluble Temporary Root Canal Filling Material

Applications
- Weeping canal
- Formation of a hard tissue barrier (Apexification)
- Temporary root canal filling
- Internal & external root resorption

Composition
- Calcium Hydroxide, Barium Sulfate, Poly Propylene Glycol

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 (2 syringe packing available)
- Disposable tips
- One ring rotator for direction control of the tip
- Dimension: 228×61×22
- Weight: 83g

Shelf life
- Two years from the production date.

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.
ADSEAL™
Resin Based Root Canal Sealer

**Applications**
- Permanent root canal sealing
- Thermal obturation

**Composition**
- Base: Epoxy oligomer resin, Ethylene glycol salicylate, Bismuth subcarbonate
- Catalyst: poly butanediol aminobenzoate, Calcium Phosphate, Bismuth subcarbonate

**Advantages**
- Excellent biocompatibility
- Easy to mix paste-paste
- Hermetic sealing ability
- Nonstaining to the teeth
- Insoluble in tissue fluids
- Good radiopacity

**Components**
- 13.5g dual syringe
  - Base 9g (Epoxy resin, Calcium phosphate)
  - Catalyst 4.5g (Amines, Bismuth subcarbonate)
  - Spatula
  - Mixing Plate
  - Dimension: 55x180x40(mm)
  - Weight: 135g

**Physical and Chemical Properties**

- Flow:
  - Graph showing flow measurement for different materials.

- Solubility:
  - Graph showing solubility measurement for different materials.

- Radiopacity:
  - Graph showing radiopacity measurement for different materials.

- Material Properties:
  - Graph showing material properties for different materials.

**Shelf life**
- Two years from the production date.

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  - Catalyst 4.5g (Amines, Bismuth subcarbonate)
  - Spatula
  - Mixing Plate
  - Dimension: 55x180x40(mm)
  - Weight: 135g
Z · O · B Seal
Zinc Oxide Based Root Canal Sealer

Applications
• Permanent root canal sealing

Composition
• Powder-Zinc Oxide, Rosin, Bismuth subcarbonate
• Liquid-Eugenol, Olive oil

Advantages
• Good adhesion to tooth material
• Good mixing consistency
• Excellent radiopacity
• Excellent anti-bacterial effect

Components
• Powder 15g (Zinc Oxide)
• Liquid 7ml (Eugenol)
• Spoon
• Mixing Pad
• Dimension: 63×81×70 (mm)
• Weight: 133g

Shelf life
• Two years from the production date.

Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiopacity</td>
<td>ISO 6876 - Dental root canal sealing materials</td>
<td>≥80%/90%</td>
</tr>
<tr>
<td>Solubility</td>
<td></td>
<td>0.07 %</td>
</tr>
</tbody>
</table>

Test Method: ISO 6876 - Dental root canal sealing materials
Applications
- Presence of calcification in the canal
- Narrow canals on posterior teeth
- Smear layer removal

Composition
- EDTA, Water, Ammonia water

Advantages
- Removal of inorganic substances by chelation (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 cc syringe
- Disposable tips
- Dimension : 50 x 115 x 55 mm
- Weight : 138g

Clinical Case

Shelf life
- Two years from the production date.
**MD-ChelCream**

19% EDTA Cream
Easier Filing with Lubricating Action

- New Package

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

### Composition
- EDTA, PEG

### Components
- MD-ChelCream 7g(5.4mL) x 2
- Disposable tips
- Dimension: 186x45x30
- Weight: 72g

### Advantages
- Removal of inorganic substances by chelation (EDTA-Ca++)
- Easier filing with lubricating action
- Produces the cleanest canal wall after smear layer removal

### Shelf life
- Two years from the production date.
Hydraulic Temporary Restorative

**Applications**
- Temporary cavity filling

**Composition**
- Polyvinyl Acetate, Zinc Oxide, Zinc Sulfate, Ethanol

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

**Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Shelf life</th>
<th>Setting time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>30</td>
<td>120</td>
</tr>
<tr>
<td>40</td>
<td>150</td>
</tr>
</tbody>
</table>

**Components**
- 40g White or Pink paste in a jar
- Dimension: 38x41x39(mm)
- Weight: 55g

**Shelf life**
Two years from the production date.
**NETC**

Non-Eugenol Temporary Cement

### Applications
- Temporary cementation of crown & bridges

### Composition
- Base: Zinc Oxide
- Catalyst: Rosin, Nonanoic acid

### Advantages
- Easy to mix by paste-paste type
- 1.5 minutes working time after start of mixing.
- 6 minutes setting time after start of mixing.
- Especially suitable for patients who are sensitive to eugenol.

### Components
- Base 60g (Zinc Oxide, Mineral Oil), Catalyst 20g (Rosin)
- Base 40g, Catalyst 14g
- Mixing Pad
- Weight: 160g, 120g
- Dimension: 64 × 141 × 28 ( persone, 64 × 106 × 28 ( persone)

### Physical and Chemical Properties

#### Setting time
![Graph showing setting time](image)

#### Adhesive strength
![Graph showing adhesive strength](image)

#### Compressive strength
![Graph showing compressive strength](image)

#### Film thickness
![Graph showing film thickness](image)

### Shelf life
- Two years from the production date.

**New Package**

---

Meta Biomed Product Program 2009/2010
Metacem
Adhesive Resin Cement
High strength permanent dual cure resin cement

Applications
• Crowns & Bridges (ceramic, composite, porcelain)
• Inlay/Onlay cementation
• Bonding for porcelain veneers
• Endodontic posts cementation
• Core-build up

Composition
• Base-Bis-Gma, TEGDMA,
  Barium aluminium boro silicate
• Catalyst--Bis-Gma, TEGDMA,
  Barium aluminium boro silicate

Advantages
• Easy to use for cosmetic indirect restorations.
• Provides high resistance to compressive force.
• Provides a dual-cure for highly shaded, thick or opaque cementation.
• 5 shades correspond with the VITA shade guide.
  (A1, A3, B2, TL(Translucent white), OP(Opaque))

Components
1. Metacem set
   • 2 Dual syringe(A3, Translucent white shade, 9g/ea)
   • Adhesive 5g
   • 20 Mixing tips
   • Spatula
   • 10 Adhesive brush
2. Metacem Refill
   • 1 Dual syringe(A1, A3, B2, Translucent white, Opaque, 9g/ea)

Shelf life
• Two years from the production date.

Physical and Chemical Properties

- . Flexural Strength

- . Radiopacity

- . Compressive Strength

- . Working time 2 min
  Setting time 5 min
  Flexural strength 99 MPa
  Radiopacity 2.33 mm Al/

- . Aluminium step wedge thickness(μm)
  Film thickness < 21 μm
  Water absorption 29.3 AR/μm
  Water solubility 2.3 AR/μm
Meta P&Bond
5th Generation Bonding System
This bonding agent is one step for priming and bonding

Applications
• Bonding for direct composite
• Bonding for porcelain, composite, metal repair, set amalgam, post
• Bonding for porcelain veneer
• Bonding for amalgam and indirect bonding procedures with Metacem adhesive resin cement

Physical Properties
• Dentin shear bonding strength 10.75MPa
• Enamel shear bonding strength 30.76MPa

Components
• Meta P&Bond 5g
• Micro brush 10EA
• Instruction for use

Composition
• Bis-Gma, PMGDM, 2-Hydroxyethylmethacrylate, Ethyl alcohol

Advantages
• Superior bonding strength
• 5th Generations Adhesive
• One step priming and bonding
• Ethanol base adhesive
• Wet bonding type

Shelf life
• Two years from the production date.
Meta Etchant

Meta Etchant contains 37% phosphoric acid in water thickened with unique polymer.

Applications
- Conditioning of surface for dentine and enamel
- With composite and inlay / onlay

Composition
- Phosphoric acid, H2O, Xanthan gum

Advantages
- Polymer thickened semi-gel
- Easy dispensing and application
- No residue, rinse out completely
- Thixotropic characteristics (not runny)

Directions
- Isolation: Rubber dam is the preferred method for isolation.
- Cavity preparation: Prepare cavity with minimal tooth reduction.
- Tooth conditioning/Dentin pretreatment: Apply 37% Meta Etchant gel to available enamel/dentin for 15 seconds.
- Rinse and Blot dry: Remove the gel by suction using aspirator tube and rinse for 20 seconds.
- Blot dry conditioned area with a moist cotton pellet.

Application Case

Composition
- Phosphoric acid, H2O, Xanthan gum

Components
- Meta Etchant 3g × 3 syringes
- Disposable stainless tips 20 ea
- Dimension (Ø52x152mm)
- Weight: 55g

Shelf Life
- Two years from the production date.
Nexcomp
Nano Hybrid Composite Resin
Anterior and posterior light cured restorative

Applications
- Class I, II, III, IV, V restorations
- Core-build up to replace missing tooth structure
- Diastema closures
- Direct veneers
- Composite and porcelain repairs

Composition
- Bis-Gma, UDMA, Bis-Ema
- Barium aluminium boro silicate

Advantages
- Less shrinkage
- Color match to the Vita shade guide
- Low 1.6% shrinkage for superior marginal integrity
- Filled with 40 nano sized filler for excellent polishability
- Optimum handling - Excellent Sculptability for restoring natural shape and function.
- Non-Slumping. Non-Sticky

Components
- Nexcomp Kit
  - 4g x 7 Syringe (A1, A2, A3, A3.5, B2, A2E, B2E)
  - Meta P&Bond 5g
  - Meta Etchant 3g
- Nexcomp Refill
  - 4g x 1 Syringe (A1, A2, A3, A3.5, A4, B1, B2, B3, C2, C3, D2, D3, TL, WT, OP, OA2, OA3, A2E, B2E)

Physical and Chemical Properties
- Polymerization shrinkage rate
- Compressive strength
- Flexural strength

Clinical Cases
- Before
  - Mesial fracture
  - Cervical abrasion
  - Class I cavity
- After
  - complete Nexcomp restoration
  - After restoration
  - Restoration with Nexcomp

Shelf life
- Two years from the production date.
Nexcomp Flow
Nano Hybrid Flowable Composite Resin
Light curing time 20s, ISO4049 - Resin based dental restorative material

Applications
- Restoration of invasive cavity
- Pits and fissure sealing
- Base and Liner for direct restoration
- Repair acrylic temporary materials
- Repair of esthetic indirect restorations

Composition
- Bis-Gma, UDMA, Bis-Ema TMPTMA
  Barium aluminium boro silicate

Advantages
Nexcomp Flow is low viscosity, light-cured, radiopaque flowable composite resin for minimally invasive cavity preparation.
- Filled with 40nano sized filler for excellent polishability
- Flow on demand handling
- Excellent Radiopacity
- Available in 14 shades including opaque and translucent
- No slumping and running

Components
- Nexcomp Flow set 2g X 5 syringes, 20ea disposable tips
  A1  A2  A3  A3s  A4  B2  B3
- Nexcomp Flow syringe 2g X 2 syringes, 10ea disposable tips
  A1  A2  A3  A3s  A4
  B1  B2  B3  OA2  OA3
  C2  D2  WT  TL

Physical and Chemical Properties

- Compressive Strength(MPa)

- Flexural Strength(MPa)

Shelf life
- Three years from the production date.
Biner LC is contains hydroxy calcium phosphate
Biner LC is a light cure, fluoride releasing, radiopaque cavity liner and base material specially formulated for use with adhesives and composites and with conventional restorative materials.
Biner LC contains hydroxy calcium phosphate in a urethane dimethacrylate resin.
It chemically bonds to adhesive primers, composites and other resin based material, and it micromechanically bonds to dentin.

Applications
- Protect pulp of the tooth
- Lining under all filling materials
- Protection when applying the total etch technique

Composition
- Hydroxy calcium phosphate, UDMA, Photoinitator
- Barium aluminium silicate

Advantages
- Excellent biocompatibility with dentin and pulp
- Light curing type cavity liner, cure extremely hard
- Chemically bonds to adhesives an composites
- Contains calcium hydroxy phosphate
- Releases calcium, hydroxyl, phosphate and fluoride ions
- Fluoride releasing
- Insoluble in water and oral fluids
- Radiopacy
- Flow-on-demand handling and easy dispensing

Physical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexural strength</td>
<td>More than 100 MPa</td>
</tr>
<tr>
<td>Sensitivity to ambient light</td>
<td>Homogeneous for 60s</td>
</tr>
<tr>
<td>Linear Expansion</td>
<td>2–3 %</td>
</tr>
<tr>
<td>Radiopacity</td>
<td>Yes</td>
</tr>
<tr>
<td>Depth of Cure (40 sec.)</td>
<td>5mm</td>
</tr>
</tbody>
</table>

Components
- Biner LC 2g X 2 Syringes
- 10ea disposable tips

Shelf life
- Three years from the production date.
DM Bone
Synthetic Resorbable Materials
Biphasic Calcium Phosphate (BCP) Bioceramics for Implants

Applications
- Periodontal defects
- Intrabony defects
- Ridge augmentation
- Extraction sites (Implant preparation/placement)
- Sinus lift
- Cystic cavities

Advantages
- Silicon ion containing porous Hydroxyapatite (Si-Content: Avg. 0.6 wt%)
- Optimum balance between HA and β-TCP in the ratio (%), 60:40
- Silicon ion technology speeds up the Bone Regeneration & Heal Activation
- Outstanding Biocompatibility (No Biological Rejection, No Disease Transmission)
- Excellent Osteoblastic Activity with wide surface area: 72% Porosity

Implant Case

Figure 1. Clinical and radiographic view during surgery. Intrabony defect (Left), BoneMedik-DM placed into intrabony defect (middle), radiographic view of after surgery (Right).

Figure 2. Clinical view. Pre-operative (Left) and Six months post operative (Right) clinical.

Figure 3. Radiographic view of test group. Pre-operative (Left) and Six months post operative radiographic (Right).

Figure 4. Radiographic view of control group. Pre-operative (Left) and six months post operative radiographic (Right).
SEM Observation of DM-Bone

Bone regenration capacity of DM Bone in calvarial defect

Package Specifications (1vial / box)

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Weight</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1~0.3mm</td>
<td>0.25g</td>
<td>0.25cc</td>
</tr>
<tr>
<td>0.3~0.5mm</td>
<td>0.25g</td>
<td>0.25cc</td>
</tr>
<tr>
<td>0.5~1.0mm</td>
<td>0.25g</td>
<td>0.25cc</td>
</tr>
<tr>
<td>1.0~2.0mm</td>
<td>0.25g</td>
<td>0.25cc</td>
</tr>
<tr>
<td>2.0~4.0mm</td>
<td>0.25g</td>
<td>0.25cc</td>
</tr>
</tbody>
</table>
## Dental Equipments

Meta Biomed Product Program 2009/2010

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E&amp;Q Master</strong></td>
<td>Cordless Gutta Percha Obturator</td>
<td>3.01</td>
</tr>
<tr>
<td><strong>E&amp;Q Plus</strong></td>
<td>Gutta Percha Obturator</td>
<td>3.02</td>
</tr>
<tr>
<td><strong>SmarPex</strong></td>
<td>Full Automatic Electronic Apex Locator</td>
<td>3.03</td>
</tr>
</tbody>
</table>
The E&Q Master has the same battery charging system as the mobile phone. It operates at low voltage for users safety. If the battery is discharged during use, you can replace it with an extra battery on standby for continuous use. The slim design and simple operation of the E&Q Master will maximize effectiveness and convenience.

**Advantages**

- The slim design provides a nice feeling of grip along with easy handling.
- The low-voltage battery enables safe operation.
- The simple operation enables you to learn easily and quickly.
- Easy and quick obturation with accurate and predictable filling.
- Excellent apical control & obturation of anatomically complicated canals.

**Specifications**

<table>
<thead>
<tr>
<th>Component</th>
<th>Input Output</th>
<th>Battery Type</th>
<th>Charging Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charger</td>
<td>100V ~ 240V</td>
<td>Li-ion (ICR18650-26)</td>
<td>Within 3 hours</td>
</tr>
<tr>
<td>Gun</td>
<td>DC 3.8V, 8W</td>
<td>ICR18650-26(Samsung SDI)</td>
<td></td>
</tr>
<tr>
<td>Heating Time</td>
<td>2 Minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pen</td>
<td>DC 3.8V, 8W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Time</td>
<td>1 Second</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Time</td>
<td>Continuous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gun</td>
<td>for 1.5 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pen</td>
<td>Continuous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Time</td>
<td>for 1.5 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery (Li-Ion type)</td>
<td>Li-ion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charging Time</td>
<td>Within 3 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Components**

- Master Gun
- Master Pen
- Charger
- Battery
- Gun Needle (23,25 Gauge / 6 pcs)
- Pen Tip (F,FM)
- Gutta Percha (04,06 Taper, A/C Cone)
- Gutta Percha Point (Bar)
- Heat Insulator
- Accessory Tools
- Adapter
- Charging Cord
Downpack with Master Pen

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

2. Marked length after select a E&Q Pin Tip and slugger 4-6mm short of the working length.

3. Cement master cone to 3mm, insert it to root canal and cut off the excess over the orifice using the E&Q Pin Tip with gutta percha 4-6mm short of the working length.

4. Harden the melted gutta percha with pre-warmed plunger. Now apical area & accessory canal are perfectly obstruated.

Backfill with Master Gun

5. After inserting the Gun Needle into the Root Canal, wait for 5 seconds after inserting Gun Needle to-root canal.

6. Pull the trigger slowly and fill the gutta percha up to root canal. Gun needle would be pushed by filled gutta percha naturally.

7. Harden the heated gutta percha with blow air plunger.

8. Now, the entire root canal is fully obturated.

Clinical Cases

Mandibular right 1st molar, mesial & orifices
Mandibular left 1st molar, ’S’ curved distolingual canal
Mandibular left 2nd molar, C-shape canal

Courtesy of PS Kim, DDS, MSD, Ph D.
E&Q Plus gives the clinician the option to choose from either vertical compaction of warm gutta percha, heat softened gutta percha injection or a combination of both techniques in filling the canals.

**Advantages**
- Easy & Quick obturation with accurate and predictable filling
- Possible best hermetic sealing with 3-dimensional filling (Total obturation of the entire canal including lateral canals)
- Convenient and efficient 2-in-1 filling system
- Easy to learn and master
- Easy touch button allows easy temperature setting

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Control Unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Pen</td>
<td>1. Temperature Sensor</td>
<td>2. Heating Time</td>
<td></td>
<td>DC 3.6V, 8.8A/H</td>
<td>1 Second</td>
</tr>
<tr>
<td>4) Operating Time Per Charging Capacity</td>
<td>1. Gun</td>
<td>2. Pen</td>
<td>Continuous for 3 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Battery (Ni-MH)</td>
<td>1. Capacity</td>
<td>2. Size</td>
<td>3. Operating Temperature Range</td>
<td>DC 3.6V, 8.8A/H</td>
<td>Ø18.4×8×69.5 (63g) 6EA 0 ~ 45°C</td>
</tr>
</tbody>
</table>

**Components**

- E&Q Plus Control Unit
- E&Q Gun
- E&Q Pen
- Pen Tips
- Gutta Percha Point (Bar)
- E&Q Gutta Percha Points
- Gun Needles
- Adapter
- Heat Insulator
- Cleaning Kits
- Electric Cord
- Multi Tools
SmarPex™
Full Automatic Electronic Apex Locator

Reference
1. “Root canal measurement in teeth with electrolyte compensation”
   (Medical & Biological Engineering & Computing : vol.40, 2a002)
2. “Clinical Accuracy of a New Apex Locator with an Automatic Compensation Circuit”
   (Journal of Endodontics : vol.28, 2002)
3. “Electronic apex locator”
   (Dental Clinics of North America : vol.48, 2004)

Advantages
- Automatic calibration function
- Fast and reliable with less x-ray exposure
- Provides accurate reading in any canal conditions (dry, wet with blood, EDTA, sodium hypochlorite, hydrogen peroxide, saline or water)
- Long lasting rechargeable battery with auto-power off function
- Autoclavable lip clips and file holder
- Easy and Quick reading with wide screen and audio signal
- Lightweight and compact design

Specifications

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>① 9V DC/2A AC/DC Adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charging Time</td>
<td>4 Hours</td>
</tr>
<tr>
<td>Operating Time</td>
<td>3 Hours</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Approx. 1.2W</td>
</tr>
<tr>
<td>Measuring Voltage</td>
<td>100V</td>
</tr>
<tr>
<td>Measuring Current</td>
<td>3.5-10μA, Normal 3.7μA</td>
</tr>
<tr>
<td>Display and Indicator</td>
<td>3 color LED display, Speaker sound</td>
</tr>
<tr>
<td>Display Dimension</td>
<td>65 x 91 (mm)</td>
</tr>
<tr>
<td>Outer Dimension</td>
<td>115 x 122 x 91.5 (mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>274g</td>
</tr>
</tbody>
</table>

Components
- 1 SmarPex Apex Locator
- 1 Probe
- 3 File Holder
- 5 Lip Clip
- 1 Adaptor

- SmarPex provides highly reliable accuracy in any canal condition. It is simple, quick and significantly lessens x-ray exposure risk.

Meta Biomed Product Program 2009/2010