**NeoMTA™ Plus**

**ROOT & PULP TREATMENT MATERIAL**

**DIRECTIONS FOR USE**
For other languages, go to: www.AvalonBiomed.com/NeoMTA/

MSDS is available at www.AvalonBiomed.com/NeoMTA/

Manufactured by: Avalon Biomed Inc.
7282 55th Ave E # 227
Bradenton, FL 34203 USA
www.AvalonBiomed.com

For Professional Dental Use Only.

NeoMTA Plus ROOT & PULP TREATMENT MATERIAL is a powder & gel system consisting of an extremely fine, inorganic powder of tricalcium and dicalcium silicate, which sets with water-based liquids or gels. The powder is supplied in a protective desiccant-lined container for freshness. This material is both bioactive and radiopaque.

The NeoMTA Plus formula was developed to prevent discoloration from medicaments or exposure to light. This material will not discolor over time in primary or secondary teeth.

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**INDICATIONS**
Dental procedures contacting vital pulp tissue such as:
- Pulp capping,
- Cavity lining,
- Base or
- Pulpotomies.
Dental procedures contacting the periapical tissues such as:
- Root-end filling,
- Apexification,
- Perforation repair, 
- Root resorption,
- Sealing, or
- Obliteration (pulpectomy).

**CONTRAINDICATIONS**: Hypersensitivity against caustic (high pH) solutions.

**WARNINGS**: NeoMTA Plus™ powder is caustic, as are all tricalcium silicates.

**PRECAUTIONS**:
- AVOID contact of unset mixed paste with skin or oral mucosa. After accidental contact, wash and rinse with water. Wear suitable gloves and protective glasses during use.
- NeoMTA Plus™ powder and gel must be kept well sealed.
- DO NOT contaminate the powder with an unclean or moist instrument.
- DO NOT overfill the root canals when obturating or sealing.

**ADVERSE REACTIONS**: Reversible acute inflammation of the oral mucosa if contacted with the unset paste.

**INTERACTIONS WITH OTHER DENTAL MATERIALS**: None known.

**STORAGE**: Store at room temperature (25°C/75°F); do not refrigerate. Keep bottles tightly closed. Moisture will reduce the shelf life of the powder.

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**STEP-BY-STEP INSTRUCTIONS**:

**Dosage and Mixing**:
- a) Dispense 1 scoop (0.1 gm) of NeoMTA Plus™ powder on a glass slab or a non-absorbent pad.
- b) Dispense one small drop of MTA Plus Gel next to the powder.
- c) Gradually mix the gel into the powder until the desired putty-like consistency is obtained. For some procedures, a thinner, syrupy, stringy consistency may be desired. Thoroughly mix to hydrate the powder.
- d) If the material is not to be used immediately, cover the mixed material with a moist gauze sponge (use sterile water), or a clean cover to prevent evaporation. Extra MTA Plus gel may be used to rewet the powder before it sets.
- e) If the mixture is too tacky—add a small amount of powder and next time, use less gel.

**Flow**: 29 mm when mixed 1:1 Powder:Gel, otherwise less
**Dimensional stability after 30 days**: <+0.01% expansion
**Film thickness**: <50 µm when mixed 1:1 Powder:Gel, otherwise larger
**Radiopacity**: 5 mm equivalent of aluminum
**Compressive strength**: 80 MPa after 7 days when mixed 3:1 Powder:Gel
**Pb and As**: < 2 ppm
**Washout resistant within 5 min.**

**INSTRUCTIONS**:
- a. Complete a cavity preparation under rubber dam isolation, using a high-speed bur and constant water-cooling.
- b. Excavate all carious tooth structure using a round bur in a hand piece at low speed, or use hand instruments.
- For a pulpotomy:
  - Remove the roof of the pulp chamber and all remnants of coronal pulp tissue to the level of the orifice of each root canal in multi-rooted teeth.
  - In single-rooted teeth, remove the pulp to the level of the cemento-enamel junction or slightly below this level.
- For a pulp exposure or pulpotomy:
  - Gently rinse the exposed pulp with a saline solution.
  - Control hemorrhage with pressure on the exposed pulp using a cotton pellet moistened with saline, a dilute solution of NaOCl (0.5-1.0%), or a mild hemostatic agent.
- For a base/liner, pulp exposure or pulpotomy:
  - Gently rinse the exposed pulp with a saline solution.
  - Control hemorrhage with pressure on the exposed pulp using a cotton pellet moistened with saline, a dilute solution of NaOCl (0.5-1.0%), or a mild hemostatic agent.
- For a base/liner, pulp exposure or pulpotomy:
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**DETAILED CLINICAL DIRECTIONS FOR USE**

**NeoMTA Plus™ material is shown in yellow in the drawings.**

1. **PULP CAPPING, PULPOTOMY or CAVITY LINER/BASE**:

   a. Complete a cavity preparation under rubber dam isolation, using a high-speed bur and constant water-cooling.
   b. Excavate all carious tooth structure using a round bur in a hand piece at low speed, or use hand instruments.
   c. Wipe the cavity preparation with a chlorhexidine solution.
   d. If the material is not to be used immediately, cover the mixed material with a moist gauze sponge (use sterile water), or a clean cover to prevent evaporation. Extra MTA Plus gel may be used to rewet the powder before it sets.
   e. If the mixture is too tacky—add a small amount of powder and next time, use less gel.
   f. After incidental contact, wash and rinse with water. Wear suitable gloves and protective glasses during use.
   g. Assess the pulp vitality at three-month intervals or as needed.
2. ROOT APEXIFICATION, RESORPTION or PERFORATIONS:

   a. Debride, clean, and shape the root canal system using intra-canal instruments under rubber dam isolation.
   b. Rinse the root canal with a NaOCl solution (3.0 to 6.0%).
   For root apexification:
   - Dry the canal system with paper points, being careful not to extend the points beyond a wide-open apex.
   - Gently compact NeoMTA Plus™ in the apical region, to create a 3 to 5 mm apical barrier.
   - Confirm placement with a radiograph.
   - Rinse gently.
   - Apply about 2 mm of a glass ionomer, acid-etch, and place a composite restoration.
   For resorption or perforations:
   - Isolate the resorptive defect site or iatrogenic perforation.
   - Obtain the canal space apical to the defect.
   - Dispense the NeoMTA Plus™ material into the defect site.
   - Gently compact the NeoMTA Plus™ material using a small amalgam plugger, cotton pellets or paper points.
   - Confirm the placement with a radiograph.
   - Rinse gently.
   - When the NeoMTA Plus™ material is firm (a few minutes), obturate the remaining canal space and close the coronal access as you do normally.

3. ROOT-END FILLING:

   a. Surgically access the root-end and resect 2-4 mm of the root apex using a surgical bur.
   b. Prepare a Class I root-end cavity preparation 3 to 5 mm deep with an ultrasonic tip.
   c. Isolate the area and achieve hemostasis. Dry the area.
   d. Gently compress the NeoMTA Plus™ material into the root-end cavity using a “plastic” instrument or other small carrier.
   e. Remove excess material and clean the root tip with a slightly moist cotton pellet.
   f. Rinse gently.
   g. Confirm placement with a radiograph.
   h. Close the surgical site.

4. SEALING & OBTURATION OF ROOT CANALS:

   a. Debride, clean and shape the root canal system using intra-canal instruments under rubber dam isolation.
   b. Rinse the root canal with a NaOCl solution (3.0 to 6.0%).
   c. Remove the smear layer with EDTA (15-17% for 60 sec).
   d. If desired, perform a final disinfection with, for instance, 2% chlorhexidine rinse for 60 sec.
   e. Dry the canal system with paper points.
   f. For complete obturation, gently compact the NeoMTA Plus™ material into the canals and ensure placement with a radiograph.
   g. For filling techniques where most of the canal is obturated by endodontic point material, apply a light coating of NeoMTA Plus™ material (mixed with the gel to a syrupy, stringy consistency) to the canal walls.
   - AVOID the formation of air bubbles in the material.
   - DO NOT use a pumping action.
   - AVOID overfilling of the canal.
   - MINIMIZE overextension of the material beyond the apex.
   h. Coat the disinfected and dried obturation points with the NeoMTA Plus™ material and insert them into the canal.
   i. Confirm placement of the material in the complete root canal system with a radiograph.

NOTE: For removal of Root Canal Fillings, if NeoMTA Plus™ material is used with gutta-percha points, the root canal fillings can be removed using standard mechanical techniques for the removal of gutta-percha. If only NeoMTA Plus™ material is used for obturation, use ultrasonic instruments.