Dental Waxes & Pattern Material

Compounds

• **Indications:**
  - Fabricate modifications
  - Secure items together
  - Hold items in place

• **Uses:**
  - Lengthen tray flanges, post dam, tuberosity and retro molar pad areas
  - Appliance fabrication on models
  - Rubber dam clamps in place
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Compounds

• **Composition:**
  • *natural* products – beeswax, gum, fats, fatty acids, oils
  • *synthetic* products

• **Techniques**
  • soften over dry heat
  • do not let it “fire”
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Waxes

- **General Properties**
  - smooth, shiny
  - firm yet not rigid
  - made from natural products: beeswax, fats, fatty acids, oils
  - or - synthetic products
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Waxes

- *Thermal Expansion*
- relaxation a factor
- heat vs. cold environment

- *Cooling Time*
- very fast
- can relax quickly
- “set” with cold water
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• Casting Waxes

• The fit of a casting depends on the accuracy of the wax pattern

• Wax lacks rigidity

• Does not solidify with a definite space lattice
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- **Casting Waxes**

- Usually in sheets
- Used to cast frameworks-metallic portion
- Must be in uniform thickness
- If using water-heat uniformly – not recommended water washes out chemicals
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• **Casting Waxes**
  • Wax comes in 3” sticks
  • Variety of colors
    – Blue
    – Green
    – Red
  • Has low thermal conductivity = high flow
  • Soften over dry heat
  • Never put in water
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- **Casting Waxes**
- Do not over heat
  - Causing it to become shiny or thin and runny
  - Can be melted in metal container to keep form
  - Don’t let it smoke when melting
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Types and Purposes

• **Casting Waxes**

• used in casting restorations (crowns, bridges, repairing partials)

• the fit of a casting depends on accuracy of the casting wax

• exact ingredients unknown - or- a trade secret

• 40-60% paraffin
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Types and Purposes

- *Casting Wax:* Inlay Wax - Type I

  - medium wax that is used in direct techniques
  - melting temperature with good flow at 98.6F
  - paraffin and other waxes added to provide firmness, carvability and toughness
  - carnauba waxes are added to increase melting range and reduce flow
  - synthetic waxes such as gum – added to increase toughness and surface smoothness
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Types and Purposes

- **Casting Wax:** Inlay Wax - Type II

- soft wax
- work done on a study model (in a lab)
- melting temp with good flow is 86F
- mostly paraffin
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Types and Purposes:  *Baseplate Wax*  
(Type of utility wax)

- supplied in 3x6 inch sheets
- heat uniformly in water
- **Purpose:**
- baseplate construction for partials/dentures
- teeth are set in wax at the lab
- bite records for study models
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Types and Purposes: *Baseplate Wax*

• **Types:**

  • **Type I**
    – softer wax for denture construction
  
  • **Type II**
    – medium hardness for moderate climates
  
  • **Type III**
    – harder wax for tropical climates
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Types and Purposes: *Utility Wax*

- very soft and pliable
- supplied in sheets, strips, sticks, ropes
- beeswax, petroleum and soft waxes
- extends borders of impression trays
- covers ortho brackets
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Types and Purposes: Aluwax

- supplied in 3x6 inch sheets
- gray metallic looking wax
- heavier and opaque
- bite records - heat with torch
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**Types and Purposes: Sticky Wax**

- very brittle
- heated = soft and tacky
- beeswax and resin
- sticks or blocks or canisters
- amber to orange color
- temporarily holds items together
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Types and Purposes:

• *Boxing Wax or Strips*

• supplied in long thin strips
• 12 x 2 inches
• red, green or white
• box edentulous impressions
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Types and Purposes: Boxing Sticks/Ropes

• supplied in long round/square sticks
• 11-12 inches
• red, green or white
• seals boxing wax for edentulous impressions in custom trays
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• **Types and Purposes: Periphery Wax**
  
  • a type of utility wax
  • very tacky, pliable and soft
  • supplied in 6” ropes
  • smooth peripheral borders of trays
  • high palatal areas
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• **Types and Purposes:** *Impression Wax*

• beeswax
• usually contains metallic fibers: aluminum
• bite registrations
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• **Types and Purposes:** *Block Out Wax*

• putty form or syringes
• sticky
• very thick
• Fills undercuts: voids or dipped out areas on a tooth or bubble or void on a die
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Types and Purposes:

- **Prefomed Bite Rims**
- pink baseplate wax or pink utility wax
- very hard - fillers added
- increase strength and hardness
- denture baseplates
- Bite registrations
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- **Types and Purposes:** *Wax Bite Strips*

- **Almore (light blue medium wax)**
  - tabs (have aluminum insert) or sheets to cut
- **Occlude**
  - thin green strips

- heat uniformly in hot water/heater
- bite registrations
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Types and Purposes:

- **Metallic Bite Wafers**
- heat uniformly in water
- preformed horseshoe
- aluminum foil between layers of thin wax
- blue, silver, copper, gray or pink
- bite registration