BLEACHED BEESWAX IN PELLET FORM

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General Role

Bleached beeswax (Cera Alba) is a natural and reversible material used in conservation for:

- Protective coating
- Hydrophobic barrier
- Surface stabilization
- Polishing and aesthetic finishing

Chemical-Physical Properties

- Chemical family: Bleached beeswax
- Physical state: Solid
- Color: White
- Odor: Characteristic
- Melting point: 62.55 – 66.5°C
- Acid value: 18 – 22
- Saponification value: 92 – 102
- Hubble value: 3.4 – 3.9
- Ester value: 72 – 80

Material Behavior (for Restoration Purposes)

Key Features

- White with a mild characteristic odor
- Hydrophobic (water-repellent)
- Forms a good film
- Natural and non-toxic
- Compatible with oils and organic solvents
- Softens and becomes plastic when heated

Applications

- Conservation and restoration (protective coating, surface care)
- Protection of wood, stone, and metal surfaces
- Furniture and floor polish
- Cosmetics (creams, balms, lipsticks, etc.)
- Candle production
- Water-repellent coatings

1. Film Formation

- Beeswax forms a thin, semi-permeable film on surfaces
- This film:
  - Repels water
  - Prevents the surface from becoming completely “sealed”
- Particularly advantageous for porous materials such as:
  - Stone
  - Wood
  - Plaster

2. Reversibility

- Easily removed with organic solvents (white spirit, turpentine, etc.)
- Meets the key conservation principle of reversible intervention

3. Aging Behavior

- Over time:
  - May slightly yellow (especially under UV exposure)
  - May harden
- However:
  - Does not become completely brittle
  - Can form micro-cracks
- Therefore, in most applications it is often modified with:
  - Microcrystalline wax
  - Or synthetic resins (e.g., Paraloid B-72**)**

Main Restoration Uses

1. Stone and Marble Surfaces
   - Provides water-repellent protection
   - Reduces dirt retention and adds slight gloss
     Note: Overuse on highly porous stone may “suffocate” the surface
2. Wood Restoration
   - Maintains moisture balance and enhances natural appearance
   - Typically applied as a mixture of turpentine + beeswax
3. Metal Protection (Especially Archaeological Objects)
   - Forms a thin film that:
     - Reduces oxygen exposure
     - Slows corrosion
   - Commonly used on:
     - Bronze
     - Iron

- Brass

4. Paint Layer and Surface Stabilization
   - At low concentrations, stabilizes loose surface particles
   - Not a strong consolidant on its own; often combined with resins
5. Protective Final Coating
   - Provides a finished look and homogeneous gloss after restoration

Application Techniques

Hot Application
- Applied by melting the wax
- Ensures deep penetration

  Risk: May penetrate too deeply, making reversal difficult

Cold Application (More Controlled)
- Dissolved in a solvent (commonly 5–20% solution)
- Applied with a brush or cloth
- Generally preferred in restoration

Common Mixtures
- Beeswax + Turpentine → Classic wood polish
- Beeswax + Microcrystalline wax → More stable, resistant to yellowing
- Beeswax + Paraloid B-72 → Balances protection and reversibility

Advantages

✓ Natural and non-toxic
✓ Easy to apply
✓ Reversible
✓ Provides aesthetically pleasing results
✓ Water-repellent

Disadvantages / Risks
- Softens at high temperatures
- Tends to attract dust
- May yellow under UV exposure
- Overuse can “plasticize” the surface
- Stability decreases in very hot climates

Professional Restoration Advice
- Should rarely be used alone; typically part of a system
- For outdoor applications, combination with synthetic resins is recommended
- Always perform a small test area before full application