Raw Natural Perfumery Material Care

How to store, how long they last, and how to keep them fresh

First principles (what matters)

- **Light, heat, air, moisture = enemies.** All four accelerate oxidation or hydrolysis and flatten aroma. Keep in well-stoppered bottles, “in a cool cellar, and in the dark; light… quickly deteriorates its odor.”
- **Some materials are naturally fragile.** Citrus oils and other monoterpene-rich oils deteriorate fastest; sesquiterpene-rich woods/resins are much more durable. Note: citrus oils are “not very stable” and deteriorate with **moisture, air, and daylight**; **antioxidants + oxygen-free storage** prolong shelf life.

Containers & headspace

- **Best choices:** amber/brown glass (small packs) and lined aluminum for bulk; both protect from light and minimize permeability. (Metal/aluminum excludes light completely.)

- **Closures:** polycone or phenolic caps with PTFE liners; keep **headspace minimal**. For decants, use the smallest bottle that fits the volume.

- **Labeling & identity:** follow ISO/IFRA naming/labeling norms so you always know what’s inside (botanical name + part + method).

Temperature targets

- **Cool & stable wins.** For general storage, keep aromatics **≤18–21 °C** and away from heat swings. (Modern trade guidance.)

- **Refrigeration improves longevity**—especially for fragile oils (citrus, pine/needle, many herbs): **~1–4 °C** is commonly recommended by suppliers and labs. Let bottles **warm sealed to room temp** before opening to avoid condensation.

- **Freezing?** Safe for many essential oils and absolutes, but can precipitate waxes/crystals; thaw fully before opening. (Vendor and lab practice vary; test your

specific item first.)

Oxygen control & antioxidants

- **Decant to brims** (smaller bottles as stock is consumed).
- **Inert gas blanket** (nitrogen/argon) on bulk containers is excellent. Current compliance guidance explicitly encourages filling with a **compatible inert gas** to reduce headspace oxygen.
- **Antioxidants** (e.g., α-tocopherol) can **extend citrus oil life at very low levels**—Arctander cites efficacy “in concentrations of 0.002%.”

Moisture & contamination

- Keep stoppers/caps clean and dry; avoid water ingress (especially for resinoids and citrus oils, which Arctander notes are sensitive to **moisture**).
- Store hygroscopic materials (gums, powdered resins) with **desiccant** in a secondary sealed tub.

Light management

- **Dark is default.** Bergamot “quickly” spoils in sun. Use closed cupboards, boxes, or opaque outer cans for bulk.

Working SOP (small studio)

1. **Receive & log:** assign ID, supplier lot, date, CoA.
2. **Split stock:** keep a **master** (full, gas-blanketed if possible) and a **work bottle**.

3. **Store:** dark cabinet ≤18 °C; fragile oils in a fragrance-only mini-fridge (1–4 °C).

4. **Open discipline:** allow cold bottles to reach room temp before opening; pour, don't pipette from the master.

5. **Review:** quick sniff + color/turbidity check every 6–12 months; rotate first-in-first-out.

Shelf-life—realistic ranges by class

(Assumes cool, dark, minimal headspace; add a year if refrigerated and/or inert-gassed; subtract if kept warm or bright.)

- **Citrus expressed oils** (bergamot, lemon, orange, grapefruit): **6–18 months**. They're oxidation-prone (monoterpenes); flagged for instability and need for cool, dark storage. Consider antioxidants/deterpenized grades for longer life.

- **Herb/leaf monoterpene-rich** (basil/ct, peppermint, eucalyptus globulus): **1–2 years**; some (e.g., elemi) are "not very stable" but **antioxidants help**.

- **Spice oils** (clove, cinnamon): **2–4 years**, but watch phenolics (can darken & thicken). Steffen Arctander details clove fractions and storage freshness effects.

- **Wood/roots & sesquiterpene-rich** (vetiver, patchouli, sandalwood): **5–10+ years**; many **improve** in tone with age if protected.

- **Resins/oleo-gum-resins & their oils** (myrrh, benzoin, opopanax): **3–6 years** for oils; **resins** themselves are very durable if kept dry.

- **Absolutes/concrètes: 3–5+ years** sealed, cool, dark; may wax out or sediment—warm gently and mix before use.

- **CO_2 extracts:** variable—select grades (total vs. select) per supplier guidance; many are quite stable **if cold-stored**. (Modern supplier guidance.)

- **Tinctures in ethanol: multi-year** if tightly sealed, dark, and cool; ethanol itself is protective.

Special notes & fixes

- **Citrus oils & fats:** Lemon oil “should be preserved in a cool cellar” and that it can promote rancidity in grease (pomades)—use in alcohol bases; avoid long-term fat storage scented with lemon.
- **Elemi & peroxide formers:** Elemi oil is “not very stable”; **antioxidants** retard decomposition; **vacuum topping** to remove peroxidizing monoterpenes is a valid remediation.
- **Citrus without terpenes: Deterpenized**/terpeneless and “cold-processed” grades can improve stability and solubility; storage still should be oxygen- and light-controlled.

Quick checklist (pin to your cabinet)

- Amber glass or lined aluminum; smallest possible headspace.
- Dark, cool (≤18 °C); fragile oils **1–4 °C**. Warm **sealed** before opening.
- Inert-gas blanket for bulk; consider **α-tocopherol** for citrus.
- Separate **master vs. working** bottles; FIFO rotation.
- Re-test every 6–12 months; note color/clarity and top-note freshness.

Sources and why they matter

- **G. W. Septimus Piesse, *The Art of Perfumery* (1857):** explicit storage cautions for citruses—cool, dark, well-stoppered; notes on lemon/bergamot instability that still hold true.
- **Steffen (Steffen/Steffen) Arctander, *Perfume and Flavor Materials of Natural Origin* (1960):** repeated remarks on instability (grapefruit, elemi, etc.), the roles of **air, light, moisture**, and the efficacy of **antioxidants** and **oxygen-free storage** at very low doses.

Modern practice references: NPA good operating practices; ISO naming/label/packaging context; trade-lab storage temps and handling tips.