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How Long Does New Furniture Off-Gas?

A two-clock reference on VOC and formaldehyde emission timelines — for the general population and for chemically sensitive people.

Version v1.0 · July 2026 · Typical ranges, not product guarantees

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The short answer

New furniture off-gasses on two different clocks. The **smell** (physical VOCs in foam, fabric, and adhesives) fades in weeks to a few months. **Formaldehyde** from any particleboard or MDF is a different, much slower source — the resin keeps regenerating it, so it can emit for one to several years. For a chemically sensitive person, whichever source is still above your personal reaction threshold sets the “I no longer react” date — and if the piece contains composite wood, that is almost always the long formaldehyde clock.

The two-clock model

A newly manufactured upholstered item emits from two fundamentally different kinds of source, and they do not decay on the same schedule.

CLOCK 1 · FAST

The VOC / odor clock

Volatile organic compounds physically held in foam, fabric, and adhesives — the fast fraction and the source of most “new-furniture smell.” It decays roughly exponentially over **weeks to a few months**.

CLOCK 2 · SLOW

The formaldehyde clock

Formaldehyde generated by urea-formaldehyde (UF) resin in composite wood (particleboard, MDF, some plywood). It does not simply evaporate — the resin keeps chemically regenerating formaldehyde — so it persists for **one to several years**.

Because formaldehyde is an irritant that sensitive people respond to even at concentrations too low to smell, any item containing composite wood is typically governed by Clock 2 — the long one.

Clock 1 — the VOC / odor clock

Foam, fabric, and adhesives

The volatile fraction decays approximately exponentially, highest immediately after unpackaging and tapering steeply after that. In room-scale testing of memory-foam products, airborne VOCs peaked on the first day and decayed over the following month, following a double-exponential decay — short-term half-lives on the order of hours, and a longer-term half-life of roughly 24 days.

Practically, total VOCs commonly fall **50–80% from peak by day 7** and approach near-background within **2–4 weeks** for low-emission foam. The heavier aromatic tail runs longer: aromatics such as toluene, xylene, and ethylbenzene decline over roughly the first four months, with emitting materials still measurably affecting indoor air out to about 35 weeks. Trace release continues indefinitely as the polymer ages, but at levels generally indistinguishable from normal indoor background in a ventilated space.

Resulting timelines

- **General population (odor no longer noticeable):** about 2–4 weeks in a normally ventilated room.
- **Sensitized / MCS individuals (VOC fraction):** longer. Reactive people respond well below general-population odor thresholds, so where an unaffected person is comfortable within a month, a sensitive person may still notice the aromatic and diffusion tail for roughly **2–6 months**.

The sensitized-individual extension is an informed extrapolation from the fact that reaction thresholds vary widely between people — not a single measured value. There is no clean, universal “sensitivity threshold” in the literature.

Clock 2 — the formaldehyde clock

Composite wood (particleboard, MDF, some plywood)

This is the long pole, and the one that matters most for sensitive occupants. Unlike the physical VOCs, formaldehyde emission does not decay to background over weeks, because urea-formaldehyde resin continues to hydrolyze and generate new formaldehyde over an extended period.

Published behavior: MDF and particleboard emit formaldehyde at detectable levels for roughly **6–12 months** under normal indoor conditions, with emission rising about 2–3× at elevated temperature (above ~75°F) or humidity (above ~50% RH). The U.S. ATSDR benchmark is that most formaldehyde from pressed-wood products is released within about **two years**. Worst-case pieces can emit measurably for **3–5 years** — a urea-formaldehyde particleboard has been documented still emitting after 3.5 years, and spiking again whenever exposed to heat and humidity.

Regulatory context matters. Composite wood sold in the U.S. under EPA TSCA Title VI and CARB Phase 2 (in force since 2018) has a capped initial formaldehyde emission, which places compliant modern products toward the shorter end of the range relative to older or non-compliant imported board. The source still regenerates — it simply starts lower.

Bottom-line timelines

Emission source	General population (odor gone)	Sensitized / MCS (no reaction)	Governing factor
Foam, fabric, adhesives (VOC / odor)	~2–4 weeks	~2–6 months	Physical evaporation + diffusion; decays exponentially
Composite wood (formaldehyde)	Often not the odor driver	~1–2 years	Ongoing chemical regeneration from UF resin
Semi-volatiles (flame retardants, plasticizers)	Not typically perceptible	Low-level, throughout furniture life	Very low vapor pressure; slow, near-constant release

- **No formaldehyde source** (solid-wood or no-added-formaldehyde frame, low-emission foam): a sensitive person is typically comfortable within **~2–6 months**, governed by the VOC tail.
- **Contains particleboard / MDF** (the common case): the governing clock is formaldehyde — realistically **~1–2 years** to fall below a sensitive person's reaction threshold, with most released by about two years.

What influences the timeline

The same item can sit at either end of these ranges depending on conditions and construction:

- **Temperature.** Emission rises with heat — roughly a doubling per ~13°F / 7°C for many compounds — so warm storage or a warm room speeds release (and shortens the total clock), while cold slows it. This is the basis of an unoccupied “bake-out.”
- **Ventilation.** Fresh-air exchange lowers indoor concentration and clears surface-held VOCs quickly; it has less effect on the release rate of diffusion- and resin-limited sources deep in the material.
- **Humidity.** Higher humidity accelerates formaldehyde release from UF resin (hydrolysis), raising short-term emission from composite wood.
- **Material and certification.** Low-emission foam (e.g., CertiPUR-US), whole-product certification (e.g., GREENGUARD Gold), solid-wood or no-added-formaldehyde frames, and TSCA/CARB-compliant board all shift an item toward the shorter, lower-emission end.
- **Surface condition.** Unfinished or exposed composite-wood edges emit formaldehyde several times faster than sealed, painted, or laminated surfaces.

Reference notes

Figures above are typical ranges drawn from published findings on foam, mattress, composite-wood, and building-material emissions. Individual products vary with formulation, construction, and environment.

- Room-scale study of memory-foam products: airborne VOCs peaked day 1 after unpackaging and decayed over ~31 days; fit a two-phase double-exponential source-decay model (short-term half-lives ~hours, longer-term ~24 days).
- Foam / mattress emission summaries: total VOCs commonly fall 50–80% from peak by day 7 and near background within 2–4 weeks for low-emission foam; trace release continues indefinitely at background-indistinguishable levels in a ventilated space.
- Meta-analysis of VOC emissions in new and renovated buildings: aromatics (toluene, xylene, ethylbenzene) declined over ~first four months; emitting materials measurably affected indoor air out to ~35 weeks in a dwelling, ~8–17 weeks in an office.
- Composite-wood formaldehyde behavior: MDF/particleboard emit at detectable levels ~6–12 months under normal conditions, rising ~2–3× above ~75°F or ~50% RH; unfinished/exposed edges emit several times faster than sealed surfaces.
- ATSDR benchmark: most formaldehyde from pressed-wood products released within ~2 years; worst-case pieces measurable 3–5 years; UF particleboard shown still emitting after 3.5 years, spiking under heat and humidity.
- Regulatory context: U.S. EPA TSCA Title VI / CARB Phase 2 (effective 2018) caps initial formaldehyde emission, placing compliant board toward the shorter end of the duration range.

This document is a general scientific reference on furniture emission timelines. Ranges are drawn from peer-reviewed and agency sources on foam, mattress, composite-wood, and building-material emissions; they are not a guarantee for any specific product, and nothing here is medical advice.