

Candle Making — Workbook

This workbook turns the course into bench practice. Each section maps to a course module and gives you exercises to build pouring skill, worksheets to record what actually happens with your wax, wick, and fragrance, and checklists to make safe, clean-burning results repeatable. Work through it with your melter and vessels in front of you, and keep your filled-in pages as your personal recipe book and a record of what burns well and what sells.

Waxes, Containers, and a Safe Pour Station

Choose a wax and a candle-rated vessel, set up a safe melting station, and do the wax math so a mystery jar becomes a known recipe.

Exercise: Water-Test Your Vessels and Build a Wax Recipe

Pick two vessels you want to use. Fill each with water to your intended fill line, tare-weigh the water in grams, and multiply by 0.86 to estimate the soy wax each holds. Add about 10 percent for pot cling, then calculate the wax and fragrance split for an 8 percent fragrance load. Record everything so you never re-measure these jars.

- How many grams of water did each vessel hold to your fill line, and what wax weight did that give after the 0.86 factor?

- For an 8 percent load, how many grams of fragrance and of wax does one vessel need?

- What total wax (including the 10 percent buffer) does a batch of all your vessels require?

Worksheet: Wax and Vessel Selection Sheet

Before committing to supplies, fill this out for two candidate wax-and-vessel combinations you are comparing, then circle the one you will commit to for your first candles.

Wax type (soy 464, soy 444, beeswax, coconut-soy, parasoy)

Supplier-stated melt point (F)

Maximum fragrance load (percent)

Supplier-recommended pour temperature range (F)

Vessel material and brand (annealed glass, ceramic, tin)

Vessel inner diameter (inches)

Water weight to fill line (g) and estimated wax weight (g)

Your decision and reason

Checklist: Safe Pour Station Setup Checklist

- Double boiler or dedicated wax melter ready (never direct flame)
- Digital or infrared thermometer and a scale reading to 0.1 g on the bench
- Surface covered with parchment or a silicone mat
- Class B (or multipurpose) fire extinguisher within reach; no water near the wax
- Fragrance bottles stored away from the heat source
- Children and pets kept clear of the hot pour pot

Wicks, Pouring, and Cure

Size and center the right wick, pour at the correct temperature, cure properly, and run a structured burn test that certifies the recipe.

Exercise: Side-by-Side Wick Test

For one vessel and one wax, pour three identical candles with three adjacent wick sizes (for example CD 16, CD 18, and CD 20 in a 3 inch soy candle). Keep wax, fragrance, fragrance load, color, and pour temperature identical across all three so the only variable is the wick. Cure them all the same length of time, then burn-test each and pick the winner.

- Which three wick sizes did you test, and which reached a full melt pool to the glass within about two hours?

- Which sizes tunneled (pool too small) and which smoked, sooted, or overheated the glass?

- Which wick did you choose as the recipe, and what was the deciding observation?

Worksheet: Pour Log Sheet

Complete one row of this log for every batch you pour so a result you like can be reproduced exactly.
Date and batch number

Wax type and total wax weight (g)

Fragrance name and load (percent) and grams

Temperature fragrance was added (F)

Stir time (minutes)

Pour temperature (F)

Vessel and wick series and size

Ambient conditions (room temp, drafts) and notes on the top

Worksheet: Burn Test Record

Run a cured candle through a full burn-down and record each session so the burn, not the cold sniff, certifies the recipe.

Candle ID and cure days before testing

Session number and burn duration (hours)

Time to full melt pool to the glass (minutes)

Flame height and steadiness

Soot, mushrooming, or smoke observed (yes/no and detail)

Glass temperature (comfortable / hot)

Tunneling or issues low in the jar

Verdict (pass / wick up / wick down / less fragrance)

Checklist: Pour and Cure Checklist

- Wick glued or stickered to a clean dry base and centered with a holder
- Fragrance weighed and added at the supplier's binding temperature
- Fragrance stirred gently and thoroughly for a full two minutes
- Poured within the supplier's pour-temperature window (e.g. 135 to 145 F for soy 464)
- Vessels cooled slowly, undisturbed, away from drafts and cold surfaces
- Cured the recommended time (about 14 days for soy) before burning or selling

Fragrance, Color, and Fixing Defects

Load fragrance within IFRA and wax limits, blend balanced scents, color cleanly, and trace each defect to its single root cause.

Exercise: Blend a Three-Note Signature Scent

Build one fragrance from a dominant note, a supporting note, and an accent (for example 50 / 30 / 20 by weight). Blend small amounts by weight, recording every gram, then pour a small test candle within your wax's maximum load. Cure it and burn it, judging both cold throw on the shelf and hot throw in the room, and adjust the ratio toward balance.

- What three oils and ratio did you start with, and what did the cold throw smell like versus the hot throw?

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- Did the blend fade fast (too top-heavy) or feel flat, and how did you rebalance it?

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- What final ratio did you lock in, and did the combined load stay within your wax limit?
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Worksheet: Fragrance Load and IFRA Sheet

Fill this out for each fragrance before you pour with it so your load stays both effective and legal.

Fragrance name and supplier

Supplier maximum candle load (percent)

IFRA candle-category maximum (percent)

Flash point (F)

Load you will use (percent) and grams per batch

Note type (top / middle / base / blend)

IFRA certificate and SDS on file (yes/no)

Cold throw and hot throw notes after a test burn

Worksheet: Defect Diagnosis Sheet

When a candle comes out wrong, work through this sheet to match the symptom to its single most likely cause before you change anything.

Defect observed (tunneling, frosting, sinkhole, wet spot, sweating, rough top, mushrooming, soot)

Where on the candle it appears

Most likely single cause (wick, pour temp, fragrance load, cooling, first-burn)

The one variable you will change

Re-pour or re-burn result

Fix to record in the recipe so it is never re-solved

Checklist: Fragrance and Color Safety Checklist

-] Fragrance load kept at or below the wax maximum and the IFRA candle limit
-] Combined oils in a blend counted toward one total load, not per oil
-] Fragrance added below the wax working temperature and oils stored away from heat
-] Candle-specific fragrance oil used (not soap or diffuser oil)
-] Color added with candle dye or dye blocks, never crayons
-] Color kept light so it does not force a larger wick

Finishing, Labeling, and Selling Your Candles

Finish tops and brand the vessel, label to ASTM and IFRA standards, photograph the work, and price candles to make money.

Exercise: Finish, Label, and Price One Sellable Candle

Take one cured, burn-tested candle through a full finish: heat-gun the top level, trim the wick to a quarter inch, and wipe the vessel clean. Design a label that carries the ASTM F2058 warning, the identity and scent name, the net weight, and your business name. Photograph the candle lit and unlit with a scale prop, then run it through the pricing formula to set a wholesale and retail number.

- Did the heat-gun pass give a clean level top, or did any pitting or scorching remain to fix?
- Does your label include the fire warning, identity, net weight, and your contact, and what is still missing?
- What retail price did the formula give, and were you tempted to undercut it to match cheap imports, and why?

Worksheet: Candle Costing and Pricing Sheet

Complete one row of the costing math for a finished candle so your price covers materials, time, overhead, and margin.

Candle name and size (oz / g)

Material cost (jar, lid, wick, wax, fragrance, dye, label, packaging)

Time to make and finish (minutes) and your hourly rate

Labor cost (time times rate)

Overhead share (equipment, studio, fees, failed test candles)

Base cost (materials plus labor plus overhead)

Wholesale price (base times multiplier)

Retail price (roughly double wholesale)

Checklist: Label Compliance Checklist

- ASTM F2058 fire-safety warning with the caution symbol present
- Stop-use level stated (e.g. discontinue when a half inch of wax remains)
- Product identity and scent name shown
- Net weight of wax stated by weight (e.g. 8 oz / 227 g)
- Business name and contact or location included
- IFRA certificate and SDS on file for the fragrance used
- Local country/state labeling rules checked for any extra requirements

Checklist: Ready-to-Sell Checklist

- Top heat-gun leveled and free of pits, with the wick trimmed to a quarter inch
- Vessel and rim wiped clean of wax and fingerprints
- Branding consistent across vessel, label, and scent name
- Clean product photos taken lit and unlit, with a scale prop
- Net weight, ingredients, and fragrance story stated honestly
- Price covers jar, wax, wick, fragrance, label, time, overhead, and margin
- Care card included instructing a full first-burn melt pool and wick trimming

Your Action Plan

1. Pick one wax (soy 464 is the easiest start) and order it with candle-rated vessels of 2.5 to 3 inch inner diameter, plus three adjacent wick sizes to test.
2. Set up a safe melting station with a double boiler or melter, a 0.1 g scale, a thermometer, and a Class B extinguisher.
3. Water-test each vessel and record its wax capacity and an 8 percent fragrance split in a vessel log.
4. Pour a side-by-side wick test (three sizes, all other variables identical) and cure them for 14 days.
5. Burn-test each test candle to the bottom, logging melt pool, flame, and soot, and choose the winning wick.
6. Blend one three-note signature scent by weight, keep it within the wax and IFRA limit, and test it in a small candle.
7. Diagnose any defect by matching the symptom to one cause, change a single variable, and re-pour to confirm.
8. Finish a batch: heat-gun the tops level, trim wicks, and wipe vessels clean for a consistent look.
9. Design a compliant label with the ASTM F2058 warning, identity, net weight, and your contact, and file the fragrance IFRA certificate.
10. Cost and price your first candles with the formula, photograph them lit and unlit, and list or show them at a market and note what sells.

