Chapter 1

Test 3: SOP Retort Line Catcore

SOP 30-A — Retort Line Floor Operations For CatCore SKUs

Batch Size: 10 kg run = 100 pouches $\times$ 100.00 g declared weight, target 100.5g $/pm$ 0.5g
Premix Dosing: Color-coded QC verification required. CatCore system uses RED stickers for Premix. Refer to SOP 30-B for DogCore SKU.
Target Calories: CatCore 100-110 kcal/100g
Total Production Time: Approximately 7-8 hours (single production day) with 2 work benches for parallel processing to optimise time, pathogen load and flavor profile. **Reference:** For detailed QC

tolerances, assay protocols, and audit trails, see the detailed SOP binder. This document is for line cooks and supervisors on the shop floor.

Mass Balance Summary (per 100 pouches)

Table 1.1: Mass Balance for 10 kg Production Run (100 pouches)

Component	Per Pouch (g)	Per Batch (kg)	Notes
SOLID PHASE			
Raw solids (per SKU BOM)	65.0	6.500	As specified in SKU formulation
Water absorption during blanch	+2.0	+0.200	Approximately 3% weight gain
Blanched solids (net)	67.0	6.700	Ready for marination
TOTAL LIQUID PHASE			
Bone broth (gelatinous base)	40.0	4.000	From initial 4.10 kg total, set aside 0
Blanch Water recovery	2.5	0.250	Recovered from blanching
Liquid Palatant	1.0	0.10	Addition of Liquid Palatant - Antioxi
Broth Liquid Total	43.5	4.350	Split into TWO BROTH SYSTEM
LIQUID PHASE — Broth A (Premix carrier)			
Bone broth (base)	10.0	1.000	From initial 4.10 kg total
CatPro premix	1.0	0.100	Color-coded packet
Blanch water recovery	2.5	0.250	Recovered from blanching
Broth A subtotal	12.5	1.250	For marination
LIQUID PHASE — Broth B (Gel system)			
Bone broth (base)	31.0	3.100	From initial 4.10 kg total
Alginate-Ca premix	1.0	0.100	Added just before filling
Broth B subtotal	32.0	3.200	Gel injection phase
Phase 1 Fill (Solids + Broth A)	**80.5**	**8.050**	First fill (scale tared)
Phase 2 Fill (Broth B + Gel)	**32.0**	**3.300**	Second fill (injected)
PRE-RETORT TOTAL (food only)	**112.5**	**11.250**	Target before sealing
Palatant-Antioxidant A/B (distributed in broth) — Included in broth totals			
RETORT PROCESS			
Moisture loss during retort (−10%)	−11.25	−1.125	Water evaporates
POST-RETORT FOOD WEIGHT	**101.0**	**10.100**	Actual food content
FINAL PRODUCT			
Declared food weight	100.0	10.000	Label claim
Pouch tare weight	+4.0	+0.400	Empty pouch material
Final packaged weight (QC target)	**104—105**	**10.400—10.500**	Post-retort scale reading

Line Supervisor Pre-Production Checklist

Complete this checklist before starting production. All items must be checked and signed off.

Prepare Timesheet. Timesheet should have Start time, End time, Target Duration and Actual Duration for each step, Sign off to next step.
Confirm premix Certificates of Analysis (COAs) are current and QC-approved
Verify batch weights for all premixes, solids, and broth match Bill of Materials (BOM)
Assemble pre-production items:

- Retort pouches (100 units QC checked + 10 spares).
- Labels and batch markers
- Calibrated pH meters (QC sign-off required)
- Calibrated scales (QC sign-off required)
- Calibrated thermometers and sensors (QC sign-off required)

Confirm color-coded premix packets match production schedule:

- **RED sticker** = CatPro (all CatCore SKUs)
- Verify Palatant-Antioxidant variant: A (Standard - RED STICKER) or B (Sardine SKU- BLUE STICKER)

Prepare production log forms and batch record sheets
Obtain all equipment calibration sign-offs from QC before production start
Assemble all empty pouches in filling line prior to handling food materials to ensure short handling time. This ensures control of pathogen load and flavor profile.

Supervisor Sign-Off: _____ **Date:** _____

QC Sign-Off: _____ **Date:** _____

Step 1: Liquid Phase Preparation

Estimated Time: 15—20 minutes (operator active)
Personnel Required: 1 operator
Equipment Required: Heating vessel, paddle mixer, calibrated pH meter, thermometer

Day before production:

1. Render bone broth overnight (minimum 12 hours) and skim if needed. Sieve in fine mesh to remove grit.
2. Chill broth to 4 °C . Maintain Cold Chain Logs. Discard if more than 24 hours.
3. Store covered until production day

On retort day: Log Start Time in Timesheet: ____

4. Measure **4.10 kg bone broth** and transfer 4.00 Kg to heating vessel. Set aside 0.10Kg for evaporation loss and ops error.
5. Slowly warm 4.00 Kg Broth to 25 °C while gently stirring (3—5 min)

6. **pH Check #1:**
   - Target: pH 6.4—6.5 (5 min)
   - Use calibrated pH meter
   - If outside range, adjust with food-grade acid/base (5 min)
   - **Obtain QC sign-off before proceeding**
7. Continue warming to 40 °C while stirring (10 min)
8. **Add 100 ml Palatant-Antioxidant premix (2 min):**

   CRITICAL STEP — CANNOT BE SKIPPED
   Purpose: Protects solids from oxidation during processing, provides palatability enhancement, and supplies primary Vitamin E
   - **Premix A (standard antioxidant - RED STICKERs):** Use for Heart, Liver, Gizzard, Spleen, Kidney SKU
   - **Premix B (enhanced antioxidant - BLUE STICKER):** Use for Sardine SKU ONLY

   ✓ Verify bottle label matches production schedule
   ✓ Check color coding on bottle
   ✓ **Obtain supervisor sign-off before adding**
9. Paddle mix for 2—3 minutes until fully dispersed (3 min)
10. **Total liquid: 4.20 kg** (broth + Palatant-Antioxidant)
11. Maintain steady temperature at 40 °C
12. Skim foam if present

QC Checkpoints:

- pH 6.4—6.5 (recorded in batch log)
- Temperature 40 °C $\pm$ 2 °C
- Complete dispersion of Palatant (no oil separation)

Log End Time in Timesheet: ____ Log Duration: Target 30—35 minutes. If over this limit, halt and call supervisor. This step is essential to control pathogen load and flavor profile.

Step 1A/ Step 2: Solid Phase Preparation and Steam Blanch