Scheduled process

Tomato-based sauce with diced peppers & cheese, seasoned (acidified)

Product classification: acidified food

Product name: Patty's Perky Parmesan Pasta Sauce. Formula date: 11-Nov-2024

FDA food category (FDA Form 2541e Section B2): gravies/sauces (spaghetti sauce, mushroom gravy)

Pursuant to 21 CFR §108 (Emergency Permit Control), 21 CFR §114 (Acidified Foods), and 21 CFR §117 (Preventive Controls for Human Food).

Prepared for

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Allergens

MILK

Acidulants (2541e Sec. E5)

Citric Acid
Fruit Juice(s)
Tomato Product(s)

Date.....19-Mar-2025
Valid through.....31-Dec-2028

The "Valid through" date is intended as a best practice to be used as a means of change control and systems review.

Include this document with your Food Safety Plan.

Critical factors (in red) (must be documented)

Finished pH.....4.10 maximum
Measured at 70±10°F

Hot fill & hold
Fill temperature.....165 °F minimum
(Temperature at end of hold.....159 °F minimum)

Inversion hold.....1:22 minutes minimum
82 seconds minimum

CC: **Cool containers in cartons or in ambient air without fans.**
FC: **Changes in formula proportions require a new process.**
Batch scaling does not constitute a formula change.
PM: **Preparation method changes require a new process.**

Batch formula

50.0 gallon batch
8.67 lb/gal estimate **changes in formula proportions require new scheduled process letter**

Ingredient	Producer's base formula	Weight (lb)	Weight %	Weight % of acid or low-acid groupings
Tomatoes, crushed, concentrated, super-heavy, № 10 (105 oz avoir) can, RedGold 3-72940-11011-3 [tomatoes, salt, citric acid]	8 cans	250	57.732%	
Tomato paste, 111 oz avoir pouch, RedGold (3-72940-75064-3)[tomatoes, citric acid] or equivalent	1 pouch	33.1	7.629%	
Lemon juice concentrate, 400 gpL, aseptic	0.5 lb	2.38	0.550%	65.911%
Pepper fruit, sweet red, fresh, trimmed, without seeds or stems, diced	19.5 lb	92.9	21.443%	
Oil, olive, extra virgin	3.5 lb	16.7	3.849%	
Onion bulbs, fresh, peeled, trimmed, diced	3 lb	14.3	3.299%	
Parmesan cheese, grated	3 lb	14.3	3.299%	
Garlic cloves, fresh, peeled, trimmed, minced	1.5 lb	7.15	1.649%	
Basil leaves, fresh, chopped	0.5 lb	2.38	0.550%	34.089%
Total		433	100.000%	100.000%

Preparation method (changes require new scheduled process letter)..... Critical and operating limits

1. Regarding temperature measuring devices (TMDs):
   a. Use TMDs accurate to ±2°F or closer. Identify each TMD by a unique code.
   b. Calibrate each TMD against a NIST-traceable standard at temperatures of use.
   c. Calibrate bimetal (dial-type) TMDs daily.
   d. Calibrate other TMDs regularly to assure reproducible results.
   e. Maintain a calibration log for each TMD.
2. Regarding pH meters:
   a. Use pH meter accurate to 0.01 pH unit.
   b. Use 2-point calibration with buffers at pH 4.01 and 7.00.
   c. Calibrate pH meter daily and as needed to assure reproducible results.
   d. Maintain pH calibration log that includes date, time, buffer lots, and measured pH values in buffer before correction.
3. Document results of measurement of each critical factor.
4. Wash containers and closures. Drain and keep inverted until use.
5. Record types, sources, and quantities of all ingredients.
6. Combine all ingredients, mixing thoroughly.
7. Heat.
8. Check product pH on a cooled homogenized sample. Record pH & temperature..... UL: pH 4.00 maximum at ambient temperature
   As necessary, adjust pH with lemon juice. Record any additional amounts & resultant pH readings.
9. Heat mixture to at least 199°F..... LL: Cook temperature: 199°F minimum
   or use an equivalent temperature-time combination (table on right).
10. Fill containers at 170°F minimum. Cap.
11. Invert containers immediately. LL: Fill temperature: 170°F minimum
12. Measure temperature of last container filled..... LCL: Fill temperature: 165°F minimum
13. Hold inverted for 90 seconds (1:30 minutes) minimum..... LL: Hold time: 90 seconds (1:30 minutes) minimum
    LCL: Hold time: 82 seconds (1:22 minutes) minimum
14. Cool containers in cartons or in ambient air without fans. CL: Cooling condition: cool containers in cartons or in ambient air without fans.
    If cooling in cartons, assure that product temperature in central case is 110°F or less within 24 hours.
15. Measure product pH at ambient temperature. Record pH & temperature..... UL: pH 4.00 maximum at ambient temperature
    Blend entire contents of container to a uniform paste before pH measurement. UCL: pH 4.10 maximum at ambient temperature

Abbreviation key
Critical limits MUST be met
CL: Critical limit
LCL: Lower critical limit
UCL: Upper critical limit

Operating limits *should* be met
L: Operating limit
LL: Lower operating limit
UL: Upper operating limit

Thermal process calculation factors

For safety
LSV for *Escherichia coli* O157:H7
F.....1.20 minutes
T_{ref}.....160.0 °F
z.....19.5 °F
Process reference:
Breidt F, Sandeep KP, Arritt FM. 2010. Use of Linear Models for Thermal Processing of Acidified Foods. Food Protection Trends 30 (5): 268-272.

For spoilage control
maximum pH.....4.10
F.....1.00 minutes
T_{ref}.....200.0 °F
z.....16.0 °F
Process reference:
Pflug IJ. 2010. Microbiology and Engineering of Sterilization Processes, 14th ed. Otterbein IN: Environmental Sterilization Laboratory. Table 15.24, p 15.71.

Other process factors

Equivalent cook time-temperature combinations for pH ≤ 4.10

Temp (°F)	Time (m:ss)	Temp (°F)	Time (m:ss)	Temp (°F)	Time (m:ss)
188	30:10	192	8:33	196	1:42
189	22:15	193	6:02	197	0:55
190	16:19	194	4:10	198	0:19
191	11:53	195	2:46	199	0:00

Metrics

pH of low-acid ingredients (estimated).....5.5
Finished equilibrium pH.....3.96

Template revised 19 Mar 2025 (8)

Product identifiers & container characteristics

Description	GTIN-12 (UPC)	SID	Dimensions (inches-16ths) Diameter	Height
16 fl oz cylindrical glass jar with 70-450 CT metal closure (Ball 61000 or smaller)	1-23456-78901-2	2025-03-19/001	3-07	5-03
32 fl oz cylindrical glass jar with 70-450 CT metal closure (Ball 62000 or smaller)	1-23456-78902-9	2025-03-19/002	4-03	6-13

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