**Facility: (INSERT COMPANY NAME AND ADDRESS)**

**Other retail facilities, farmer markets, etc.: (INSERT NAME)**

**Purpose:**

This HACCP plan is describes products, processing and re-packing process used for Reduce Oxygen Packaging of hard cheese, pasteurized process cheese or semisoft cheese. The establishment has a Specialized Meat Processing at Retail Food Establishment Variance that contains Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs) which are followed.

**Type of cheese (s):** (See attached “List of Cheeses”)

* Hard:
* Pasteurized Processed:
* Semisoft:

**Ingredients:** No added ingredient permitted

**Process Flow Diagram:** see below

**Facility Layout:** see attached

**Equipment used:**

* Cooler
* Smokehouse – (Type of smokehouse or oven)
* Slicer
* Vacuum Packaging Machine – (Type of vacuum machine)

**Food employee and supervisory training plan addressing food safety issues of concern:** Employees are trained in proper food safety issues associated with reduced oxygen packaging of raw and cooked foods. This includes preventing cross-contamination throughout processing and packaging by doing cooked foods before raw food, properly cooling cooked foods, and storage of reduced oxygen packages immediately after packaging. Employees will be observed to make sure they follow practices.

**Standard Operating Procedures (SOP)**

U.S. Food and Drug Administration inspected or authorized cheese processors. Cheese shall meet 21 CFR 133 Standards of Identity.

Cooked product processing:

* Cheese removed from package,
* Cold Smoked (optional) at temperature less than 80°F
* Cooled (optional) per Food Code 3-501.14,
* Sliced or portioned, as needed,
* Reduced oxygen packaged (vacuum packaged),
* Label
* Use-by date that does not exceed 30 days from its packaging or the original manufacturer’s “sell by” or “use by” date, whichever occurs first, (Note: Certain cheeses are exempt from Date Marking based on pH and Water Activity by initial processor <http://www.michigan.gov/documents/MDA_8FSDateMarking_6345_7.pdf>)
* Refrigerated, and
* Held at refrigerated temperature until sale.

There will be no cross contamination between ready to eat (RTE) food products and raw food products.

Vacuum package machine (reduced oxygen packaging) is cleaned at the end of each processing shift or more frequently as needed according to our Specialized Retail Meat Processing Variance written Sanitation Standard Operating Procedure (SSOP).

Product label will include **“Keep refrigerated at 41°F”**.

Product transport from processing facility to other company owned facility or farmer’s markets under refrigerated and/or frozen transportation. Product remains refrigerated during transportation.

ROP Cheese will be discarded if it is not sold for off-premises consumption or consumed within 30 calendar days of its packaging.

**Each Critical Control Point (CCP)**

Temperature monitoring of food products in refrigerated storage

**Critical Limits for each Critical Control Point**

Food product temperature is less than or equal to 41°F.

**Method and frequency for monitoring and controlling each CCP and who**

Contact tip or equivalent calibrated thermometer used to measure a minimum of one randomly selected food product temperature a minimum of once per day of operation day by designated employee.

**Corrective actions**

If the product temperature is greater than 41°F, determination of the cause of refrigeration malfunction, corrected, or repaired.

Product temperature is measured and action as followed:

|  |  |
| --- | --- |
| Product Temperature | Actions |
| > 41°F ≤ 48°F | Refrigerate product and sale within 7 days. |
| > 48°F  | Hold and dispose product. |

**Records**

Food temperature log (see attached)

*Process Flow Diagram*

***Process Category: Fully Cooked Non-Cured Meat and Poultry, Reduced Oxygen Packaging***

***2.*** *Receiving*

*Cheese*

***3.*** *Storage (Refrigerated)*

***4.*** *Remove from Packaging*

*Raw Meat/Poultry*

***5.*** *Racking (optional)*

***6.*** *Cold Smoke Treatment (optional)*

***8.*** *Slicing/portioning of finished product*

***10.*** *Packaging /labeling*

***11.*** *Finished product Storage*

***1.*** *Receiving Packaging Materials*

***9.*** *Storage of Packaging Materials*

***12.*** *Retail sales or transfer to other company location*

CCP < 41°F

7. Cooling (optional)

CP < 41°F within 4 hours

CP < 80°F

|  |  |  |
| --- | --- | --- |
| **(Facility Name)** |  | **Refrigeration Food Temperature Log** |
| **(Facility Address)** |  |
|  |  |  |  |  |  |  |
| **Product Name** | **Date / Time** | **Temperature (°F) Max. 41°F** | **Initials** |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |
|   |   |   |   |  |  |  |

**List of Cheeses**

<http://www.shelbycountyhealthdept.org/pdf/environmental/food/Exempt-Cheese-List%5B1%5D.pdf>



**Additional scientific data / supporting documentation as required**

**Tompkin paper**, Bruce Tompkin Ph.D. Armour Swift-Eckrich

Table 1. Minimum growth temperatures for selected foodborne pathogens.

 Minimum Growth

 Temperatures\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| Salmonellae1 | 7C | 44.6F |
| Pathogenic *E. coli* | 7-8C | 44.6-46.4F |
| *L. monocytogenes* | -0.4C | 31.3F |
| *Y. enterocolitica* | -1.3C | 29.7F |
| *Campylobacter jejuni* | 32C | 89.6F |
| *Staphylococcus aureus* | 7C | 44.6F |
| *Bacillus cereus*2 |
| psychrotrophic strains | 4C | 39.2F |
| *Clostridium perfringens* | 12C | 53.6F |
| *Clostridium botulinum* |
| nonproteolytic | 3.3C | 38F |
| proteolytic | 10C | 50F |

• 1One report of initial growth on bacon at 5C but then the population decreased.

• 2While growth of *B. cereus* occurs in milk at refrigeration temperatures (e.g., <7C), there is no evidence for this in meat and poultry. One study reported death of vegetative cells in ground beef at 12.5C (54.5F) and below.

• Parasites (e.g., *Trichinella spiralis*, *Taenia* spp., *Toxoplasma gondii*) and viruses do not multiply in meat or poultry products.

Source: International Commission on Microbiological Specifications for Foods. 1996.

Microorganisms in Foods: Microbiological Specifications of Food Pathogens. Blackie

Academic & Professional, New York.

Table 2. Estimated time (hours) for a ten-fold increase at 50, 60 and 70F.

Estimated Time (hours) to increase from 10 to 100 CFU/ml

|  |  |  |  |
| --- | --- | --- | --- |
|  | 50F (10C) | 60F (15.6C) | 70F (21.1C) |
| Salmonellae | 107 | 24 | 9 |
| *E. coli* O157:H7 aerobic | 50 | 21 | 9 |
| anaerobic | 123 | 38 | 16 |
| *L. monocytogenes*aerobic | 38 | 16 | 8 |
| anaerobic | 58 | 27 | 16 |

 *Y. enterocolitica* 68 31 16

Source: USDA ARS Pathogen Modeling Program Version 4.0.

Conditions: broth medium, pH 6.0, salt 0.5%, sodium nitrite 0.0%

# FDA Food Code 2009: Chapter 3 - Food

### ****Temperature And Time Control****

#### 3-501.14 Cooling.

(A) Cooked potentially hazardous food (time/temperature control for safety food) shall be cooled:

* 1. Within 2 hours from 57ºC (135ºF) to 21ºC (70°F); and
	2. Within a total of 6 hours from 57ºC (135ºF) to 5ºC (41°F) or less.

(B) Potentially hazardous food (time/temperature control for safety food) shall be cooled within 4 hours to 5oC (41oF) or less if prepared from ingredients at ambient temperature, such as reconstituted foods and canned tuna.

(C) Except as specified under ¶ (D) of this section, a potentially hazardous food (time/temperature control for safety food) received in compliance with laws allowing a temperature above 5oC (41oF) during shipment from the supplier as specified in ¶ 3-202.11(B), shall be cooled within 4 hours to 5oC (41oF) or less.

(D) Raw eggs shall be received as specified under ¶ 3-202.11(C) and immediately placed in refrigerated equipment that maintains an ambient air temperature of 7oC (45oF) or less.