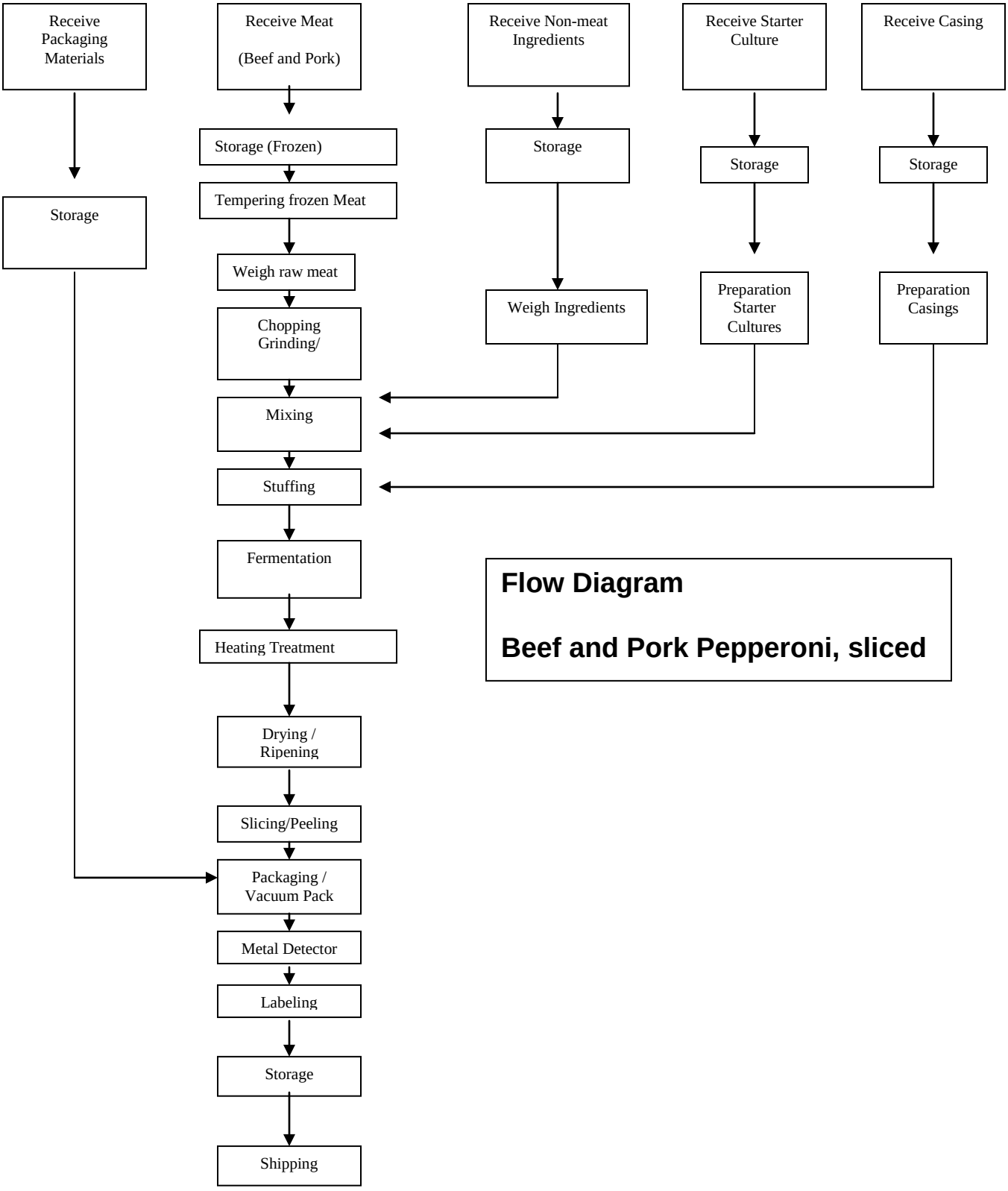
Beef and Pork Pepperoni, Sliced

Product Description	Method of Distribution
Beef and Pork Pepperoni Shelf-stable, in a resealable plastic package	Ambient Temperature Truck transport from warehouse to retail facilities
Intended Use	**Target Consumer**
Ready to Eat Used as a pizza topping to be reheated before serving	Retail Sales General Public (children, adults, elderly)
List of Ingredients	**Processing methods**
• Pork and Beef 50% Lean • Salt • Spices • Dextrose • Lactic acid starter culture • Oleoresin of paprika • Flavoring • Sodium ascorbate • Sodium nitrite • BHA, BHT, citric acid	Meat is ground, mixed with spices and other ingredients and a starter culture, stuffed into casings, fermented, dried, sliced, and packaged.


Receive Packaging Materials
Receive Meat (Beef and Pork)
Receive Non-meat Ingredients
Receive Starter Culture
Receive Casing
Storage
Storage (Frozen)
Storage
Storage
Storage
Tempering frozen Meat
Weigh raw meat
Weigh Ingredients
Preparation Starter Cultures
Preparation Casings
Chopping Grinding/
Mixing
Stuffing
Fermentation
Heating Treatment
Drying / Ripening
Slicing/Peeling
Packaging / Vacuum Pack
Metal Detector
Labeling
Storage
Shipping
Flow Diagram
Beef and Pork Pepperoni, sliced

Shelf-stable Pepperoni
HAZARD ANALYSIS AND CCPs

Ingredient/Process Step	Potential hazards introduced, controlled or enhanced at this step.[1]	Does this potential hazard need to be addressed in HACCP plan? (Yes/No)	WHY? (Justification for decision made in previous column. Base the justification on the severity and likely occurrence of the hazard.)	What measures can be applied to prevent, eliminate or reduce the hazard being addressed in your HACCP plan?[2]	Is this step a critical control point (CCP)?[3]
Receiving Beef and Pork	B – Pathogens C – Antibiotic/Drug Residues, pesticides, hormones P – Bone, Plastic, Wood	Yes No No	Pathogens known to be present and likely to cause illness if not controlled. Antibiotic residues are not an issue. Meat is received from a FSIS inspected plant that has a prerequisite program to address drug residues and has purchase specifications Physical hazards not likely since beef is received from USDA facility operating under HACCP; supplier guarantee.	Fermentation Heat treatment Drying steps later in process	No
Receive packaging material	B – None C – None P – None				
Receiving non-meat ingredients, i.e., spices	B – Pathogenic Sporeformers (e.g., *C. perfringens C.botulinum B.cereus*) Non-sporeformers (e.g., *Salmonella)* C – None P – Plastic, Wood, Rocks	Yes No	Pathogens known to be present on occasion Physical hazards of size that can cause injury are not likely, due to size of particles of ingredients and due to supplier GMPs and supplier guarantee.	Fermentation Heat Treatment Drying	No
Receive starter cultures	B – Survival of pathogens during fermentation due to inactive starter culture C – None P – None	No	Approved Supplier specifications and prerequisite programs (Transport and Storage)		
Receive casings	B – None C – None				

[1] Hazards are classified as Biological, Chemical or Physical.
[2] List control measures within your operation which occur at this or any later step.
[3] Note CCP number and hazards controlled (e.g., CCP1 (B) for a biological hazard). Use decision tree to assist in identifying CCPs.

	P – None				
Beef/Pork Storage – Frozen	B – Growth of Pathogens Pathogenic Sporeformers (e.g., *C. perfringens C.botulinum*) Non-sporeformers -*Salmonella, E. coli* O157:H7 *Campylobacter, S. aureus, L. monocytogenes, Trichinella*. C – None P – None	No	Growth of pathogens during storage of meat due to temperature abuse is not likely due to temperature control prerequisite program		
Starter Culture Storage	B – Survival of pathogens due to improper storage of starter cultures that could lead to ineffective fermentation process. C – None P – None	No	Not likely to occur due to starter culture handling program		
Casings Storage	B – None C – None P – None				
Dry Ingredient Storage	B – None C – None P – None				
Packaging Storage	B – None C – None P – None				
Weighing of Meat	B – Growth of Pathogens C – None P – None	No	Weighing time too short for pathogen growth		
Chopping / Grinding/	B – Growth of Pathogens C – None P – Metal Fragments	No Yes	Grinding includes semi frozen meat for product quality (fat smearing) that helps keep temperature down The potential for metal contamination from grinder exists.	Metal Detector at later step	No
Ingredient Weighing	B – None C – Nitrites (preservative) P – None	No	Formulation control program – purchase of pre-weighed cure (NO_2 +NaCl) prevents excess NO_2. If more than one package is added, salt level would prevent proper fermentation (detected by high pH)		
Preparation of Starter Cultures	B – Pathogen survival during fermentation resulting from improper preparation	No	Improper fermentation would be detected by high pH		

	C – None P – None				
Mixing	B – Growth of Pathogens C – None P – Metal Fragments	No No	Growth of pathogens unlikely due to short time at room temperature. Metal contamination from mixing is unlikely. No metal to metal contact. Ribbon blender has not resulted in metal fragments.		No
Stuffing	B – Growth of pathogens such as *C. perfringens, Salmonella, L. monocytogenes* C – None P – None	No	Bacterial growth during stuffing is not likely due to short time interval		
Fermentation	B – Growth of pathogens C – None P – None	Yes	Fermentation restricts the growth of bacteria of public health concern by increasing the acidity (lowering the pH) of the product. Lack of pathogen control due to improper fermentation, improper pH reduction or too slow pH reduction	This is the step at which part of lethality treatment is delivered; *Staph aureus* is controlled, reduction of vegetative pathogens such as; *Salmonella, E. coli* O157:H7 occurs	Yes
Heat Treatment	B – Pathogens such as *Salmonella, E. coli* O157:H7 C – None P – None	Yes	Improper heat treatment could allow pathogens, such as *E. coli* O157:H7 to survive.	This is the step at which part of the lethality treatment is delivered to ensure 5-log reduction of *E. coli* O157:H7.	Yes
Drying / Ripening	B – Survival of pathogens such as Salmonella, E.coli O157:H7. Growth of sporeforming pathogens such as *C. botulism* C – None P – None	No	Improper drying would not result in a shelf-stable product.	Drying step reduces the water activity to a level that prevents outgrowth of pathogenic sporeformers and contributes to die-off of vegetative pathogens such as *Salmonella*.	Yes
Peeling - Slicing	B – Recontamination with *Listeria monocytogenes* C – None P – None	No	SSOPs, GMPs, and other prerequisite programs (verified by environmental monitoring) ensure that recontamination with Lm is not likely to occur.		
Vacuum - Packaging	B –Recontamination with pathogens such as Listeria *monocytogenes* C – None P – None	No	SSOPs, GMPs, and other prerequisite programs (verified by environmental monitoring) ensure that recontamination of Lm is not likely to occur.		
Metal Detector	B – none C – None	Yes	Plant records show that metal is likely to be present as a result of the previous grinding	Magnets and metal detector. This	Yes

	P – Metal		step. Functioning metal detector is essential.	step is where control is applied.	
Labeling	B – None C – None P – None				
Storage	B – None C – None P – None				
Shipping	B – None C – None P – None				