

Heat Treated, But Not Fully Cooked - not Shelf-Stable: cured whole muscle, e.g. Bacon

## Product Description

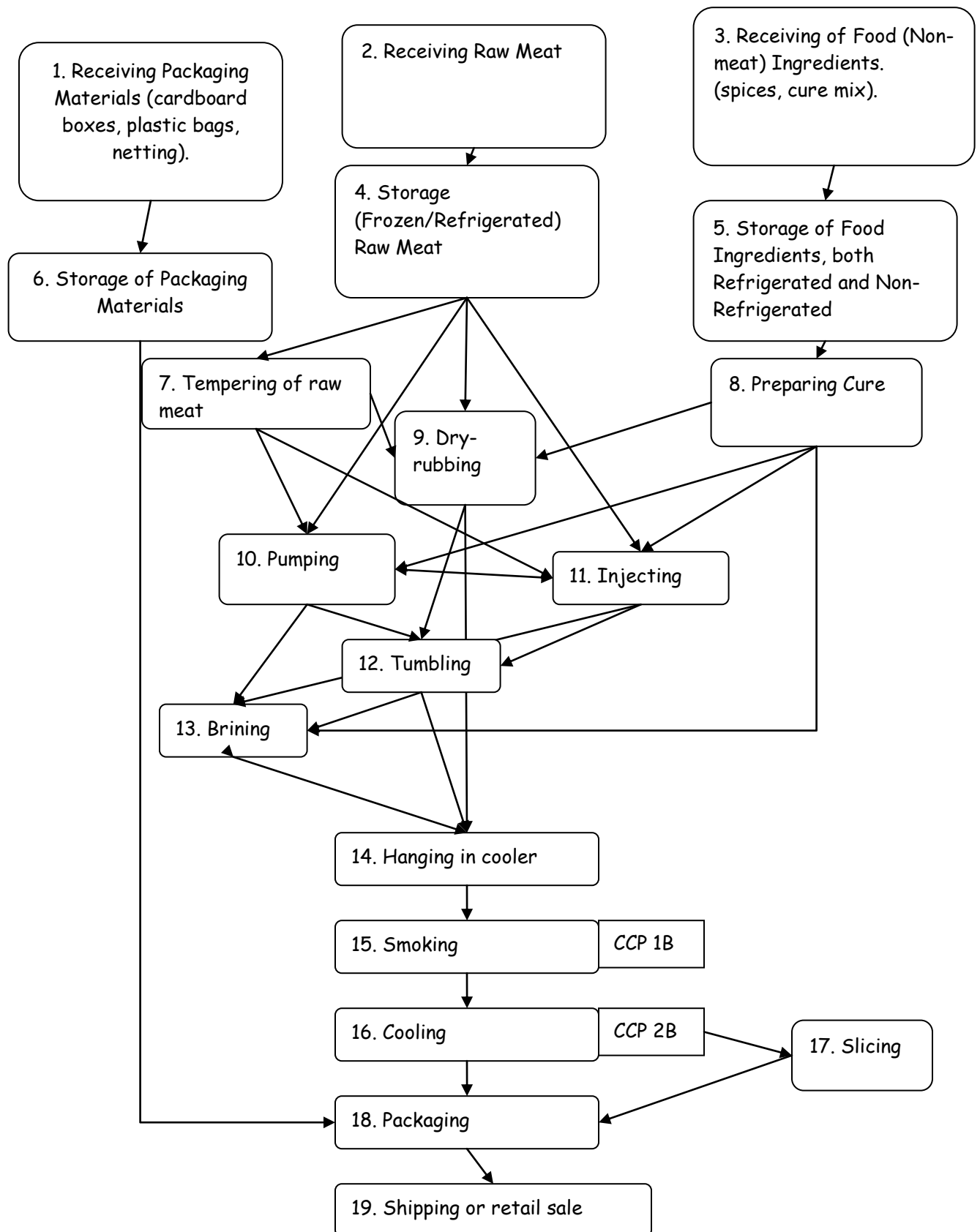
COMMON NAME:	Bacon
HOW IS IT TO BE USED?	To be cooked prior to eating
TYPE OF PACKAGE?	Vacuum-packaged in plastic film; bulk-packed in plastic bag or plastic bag in cardboard box, loose-wrapped in butcher paper (after displayed in case)
LENGTH OF SHELF LIFE, AT WHAT TEMPERATURE?	1 month refrigerated at 41°F or lower, 6 months at 0°F.
WHERE WILL IT BE SOLD?	Wholesale to bars, restaurants, grocery stores, and retail to consumers
LABELING INSTRUCTIONS:	Appropriate product label (may include cooking instructions); lot or date code safe handling statement
IS SPECIAL DISTRIBUTION CONTROL NEED	Shipped under refrigeration or frozen

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#### Directions for Use of the Process Flow Diagram

1. Examine the model Process Flow Diagram and determine which steps you actually use in your process. Cross out, white out, or delete all steps that are NOT part of your process. Re-number steps as necessary.
2. Add any processing steps not already shown and make sure that each new step is assigned a number.

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3 9/27/07 version; supersedes all previous versions

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### Directions for Use of the Hazard Analysis Form

1. Make sure that every step shown on the Process Flow Diagram is entered in the Hazard Analysis Form. Make sure that each step has the same name and number in both the Process Flow Diagram and the Hazard Analysis Form.
2. Check the three categories of hazard (Biological, Chemical, Physical) shown for each step.
  - a. If you think a listed hazard is not reasonably likely to occur, leave it in column 2 (Food Safety Hazard) and enter "No" in column 3 (Reasonably likely to occur?). Then provide a reason in column 4.
  - b. If you think there are no relevant hazards for a particular category delete the listed hazard and write "none" in column 2, write "No" in column 3, provide a reason in column 4 and cross out any information in columns 5 and 6.
  - c. If you think that a relevant hazard should be added at a step, describe the hazard in column 2 (Food Safety Hazard). Then determine whether the hazard is reasonably likely to occur and put the answer in column 3. Then provide, in column 4, a reason for deciding whether or not the hazard is reasonably likely to occur.
    - i. For example, following an SSOP, SOP, or approved formulation may make a hazard unlikely to occur, or a supplier may provide a letter of guarantee stating that the hazard should not be present.
    - ii. On the other hand, a history of outbreaks or contamination related to a hazard would mean that the hazard IS reasonably likely to occur.

Columns 5 and 6 can be left blank if a hazard is NOT reasonably likely to occur.

If the hazard IS reasonably likely to occur: fill in columns 5 and 6.

- iii. In column 5, list measures that could be applied to prevent, eliminate, or reduce the hazard to an acceptable level. NOTE: at least one of these measures must be

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either a Critical Control Point (CCP) at the present step, or a CCP at a later step.

iv. Finally, if the hazard is controlled by a CCP at the present step, enter the CCP number in column 6. The accepted numbering system is to number the CCP's in order, followed by either B, C, or P to indicate what type of hazard is being controlled. For example, if the 2<sup>nd</sup> CCP in a process controlled a physical hazard, it would be entered as CCP -2P.

d. If you agree that a listed hazard is relevant, no changes are necessary.

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**HAZARD ANALYSIS**

1. Process Step	2. Food Safety Hazard	3. Reasonably likely to occur	4. Basis of Reasonably likely to occur	5. If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	6. Critical Control Point
1, Receiving and 6. Storage - Packaging materials	Biological - Contamination with meat, other biological materials	No	Visual inspection for container integrity, contamination, at receiving makes hazard unlikely. SOP for storage makes hazard unlikely.		
	Chemical - Non-food grade materials; chemical contamination.	No	Letters of guarantee are received from all suppliers of packaging materials. SOP for storage makes hazard unlikely.		
	Physical - None	No	SOPs for receiving and storage make hazard unlikely.		
2. Receiving - Raw Meat	Biological - Presence of unacceptably high levels of vegetative pathogens: Salmonella, Listeria monocytogenes, Staphylococcus aureus.	No (vegetative pathogens)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present.		

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	Presence of sporeforming pathogens: Clostridium perfringens, Clostridium botulinum.	Yes (spore-forming pathogens)	Product is labeled to instruct consumers to fully cook product and thereby kill pathogens. Raw meat is a known source of pathogens.	Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).	
	Chemical - None	No	SOP for receiving makes hazard unlikely.		
	Physical - None	No	SOP for receiving makes hazard unlikely.		
3. Receiving - Food (Non-meat) Ingredients: spices, cure mix.	Biological- None	No	SOP for receiving makes hazard unlikely.		
	Chemical -Ingredients containing undesirable	No	letter of guarantee is received from		

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	substances		each supplier of food additives, spices, cure mix, etc.		
	Physical - None	No	SOP for receiving makes hazard unlikely.		
4. Storage(Frozen/ Refrigerated) - Raw Meat	<p>Biological - Presence of unacceptably high levels of vegetative pathogens: Salmonella, Listeria monocytogenes, Staphylococcus aureus.</p> <p>Presence of spore-forming pathogens: Clostridium perfringens, Clostridium botulinum.</p>	<p>No (vegetative pathogens)</p> <p>Yes (spore-forming pathogens)</p>	<p>Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.</p> <p>Raw meat is a known source of pathogens.</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores). Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.</p>	

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	Chemical - None	No	SOP for storage makes hazard unlikely.		
	Physical - None	No	SOP for storage makes hazard unlikely.		
	5. Storage - Food Ingredients, both refrigerated and non-refrigerated	Biological - None	No	SOP for storage makes hazard unlikely.	
Chemical - None		No	SOP for storage makes hazard unlikely.		
Physical - None		No	SOP for storage makes hazard unlikely.		
7. Tempering of raw meat	Biological - Presence of unacceptably high levels of vegetative pathogens: Salmonella, Listeria monocytogenes, Staphylococcus aureus.	No (Presence of vegetative pathogens)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill		

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	Growth of vegetative pathogens.	No (Growth of vegetative pathogens)	pathogens.  Pathogen growth is unlikely because tempering is done according to SOP for Tempering/Thawing of Frozen Materials.	Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).	
	Presence of spore-forming pathogens: Clostridium perfringens, Clostridium botulinum.	Yes (Presence of pathogens)	Raw meat is a known source of pathogens.		
	Growth of spore-forming pathogens.	No (Growth of spore-forming pathogens)	Pathogen growth is unlikely because tempering is done according to SOP for Tempering/Thawing of Frozen Materials.		
	Chemical - None	No	SSOP makes hazard unlikely.		
	Physical - None	No	SSOP makes hazard unlikely.		
8. Preparing cure	Biological -	No	Finished product		

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	Insufficient nitrite level allowing growth of spore-forming pathogens		color would be unacceptable if insufficient cure added - product would not enter commerce		
	Chemical - Ingredients not being added or used as intended;  cleaning/sanitizing chemical residues;  cure-mix may contain potential allergens;	No (improper use)  No (cleaning chemicals)  No (allergens)	Approved formulations are followed.  Pre-op SSOP makes presence of chemical residues unlikely to occur.  Application of correct label prevents inadvertent consumption of allergen by consumer. Operational SSOP prevents cross-contamination of		

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	excess cure addition	No (excess cure)	allergenic agents.  Cure mix has highly dilute concentration of nitrite; amount used is logged on batch sheet.		
	Physical - None	No	SSOP makes hazard unlikely.		
9. Dry-rubbing	Biological - Presence of unacceptably high levels of vegetative pathogens (see list in step 2 above);  Pathogen contamination via equipment (contaminated at start of shift) and workers;	No (Presence of vegetative pathogens)  No (Contamination)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.  SSOP makes hazard unlikely.		

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	<p>Presence of spore-forming pathogens.</p> <p>Insufficient nitrite level allowing growth of spore-forming pathogens</p> <p>Growth of spore-formation pathogens before cure acts</p>	<p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p>	<p>Raw meat is a known source of pathogens.</p> <p>Finished product color would be unacceptable if insufficient cure added - product would not enter commerce</p> <p>Duration of step is short enough that growth would not occur.</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).</p>	
	Chemical -	No	Pre-op SSOP makes		

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	cleaning/sanitizing chemical residues; excess cure addition	(cleaning chemicals)  No (excess cure)	presence of chemical residues unlikely to occur.  Cure mix has highly dilute concentration of nitrite; amount used is logged on batch sheet.		
	Physical - None	No	SSOP makes hazard unlikely		
10. Pumping	Biological - Presence of unacceptably high levels of vegetative pathogens (see list in step 2 above);  Pathogen contamination via equipment (contaminated at start	No (Presence of vegetative pathogens)  No (Contamination)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.  SSOP makes hazard unlikely.		

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	<p>of shift) and workers;</p> <p>Presence of spore-forming pathogens.</p> <p>Insufficient nitrite level allowing growth of spore-forming pathogens</p> <p>Growth of spore-forming pathogens before cure acts</p>	<p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p>	<p>Raw meat is a known source of pathogens.</p> <p>Finished product color would be unacceptable if insufficient cure added - product would not enter commerce</p> <p>Duration of step is short enough that growth would not occur.</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).</p>	
	Chemical - Ingredients	No	Application of		



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	<p>Pathogen contamination via equipment (contaminated at start of shift) and workers;</p> <p>Presence of spore-forming pathogens.</p> <p>Insufficient nitrite level allowing growth of spore-forming pathogens</p>	<p>No (Contamination)</p> <p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p>	<p>unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.</p> <p>SSOP makes hazard unlikely.</p> <p>Raw meat is a known source of pathogens.</p> <p>Finished product color would be unacceptable if insufficient cure added - product would not enter</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).</p>	

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	Growth of spore-forming pathogens before cure acts.	No (Growth of spore-forming pathogens)	commerce  Duration of step is short enough that growth would not occur.		
	Chemical - Ingredients may contain potential allergens; cleaning/sanitizing chemical residues; excess cure addition	No (allergens)  No (cleaning chemicals)	Application of correct label prevents inadvertent consumption of allergen by consumer. Operational SSOP prevents cross-contamination of allergenic agents.  Pre-op SSOP makes presence of chemical residues		

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		No (excess cure)	unlikely to occur.  Cure mix has highly dilute concentration of nitrite; amount used is logged on batch sheet.		
	Physical - Metal from injector	No	No history of problem (must provide evidence). Visual inspection of equipment during cleaning makes it unlikely that hazard enters commerce.		
12. Tumbling	Biological - Presence of unacceptably high levels of vegetative pathogens (see list in step 2 above);	No (Presence of vegetative pathogens)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.		

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	<p>Pathogen contamination via equipment (contaminated at start of shift) and workers;</p> <p>Presence of spore-forming pathogens.</p> <p>Insufficient nitrite level allowing growth of spore-forming pathogens</p> <p>Growth of spore-forming pathogens before cure acts.</p>	<p>No (Contamination)</p> <p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p>	<p>SSOP makes hazard unlikely.</p> <p>Raw meat is a known source of pathogens.</p> <p>Finished product color would be unacceptable if insufficient cure added - product would not enter commerce</p> <p>Duration of step is short enough that growth would not occur.</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).</p>	

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	Chemical - cleaning/sanitizing chemical residues	No	Pre-op SSOP makes presence of chemical residues unlikely to occur.		
	Physical - Metal	No	No history of problem (must provide evidence). Visual observation for foreign materials during processing, inspection of equipment during cleaning make hazard unlikely.		
13. Brining	Biological - Presence of unacceptably high levels of vegetative pathogens (see list in step 2 above);	No (Presence of vegetative pathogens)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers		

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	<p>Pathogen contamination via equipment (contaminated at start of shift) and workers;</p> <p>Presence of spore-forming pathogens.</p> <p>Insufficient nitrite level allowing growth of spore-forming pathogens</p> <p>Growth of spore-forming pathogens</p>	<p>No (Contamination)</p> <p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p> <p>No (Growth of spore-forming</p>	<p>to fully cook product and thereby kill pathogens.</p> <p>SSOP makes hazard unlikely.</p> <p>Raw meat is a known source of pathogens.</p> <p>Finished product color would be unacceptable if insufficient cure added - product would not enter commerce</p> <p>Step is done under refrigeration to prevent growth.</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).</p>	

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		pathogens)			
	Chemical - cleaning/sanitizing chemical residues	No	Pre-op SSOP makes presence of chemical residues unlikely to occur.		
	Physical - None	No	SSOP makes hazard unlikely.		
14.Hanging in cooler	Biological - Presence of unacceptably high levels of vegetative pathogens (see list in step 2 above);	No (Presence of vegetative pathogens)	Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.		

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	<p>Pathogen contamination via equipment (contaminated at start of shift) and workers;</p> <p>Presence of spore-forming pathogens.</p> <p>Growth of vegetative or spore-forming pathogens</p>	<p>No (Contamination)</p> <p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p>	<p>SSOP makes hazard unlikely.</p> <p>Raw meat is a known source of pathogens.</p> <p>Cooler temperature is maintained cold enough to prevent pathogen growth, per SOP for storage.</p>	<p>Hazard will be controlled by later CCPs of smoking (prevents growth) and cooling (prevents germination and growth of clostridial spores).</p>	
	Chemical - None	No	SSOP makes hazard unlikely.		

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	Physical - None	No	SSOP makes hazard unlikely.		
15. smoking	<p>Biological - Presence of unacceptably high levels of vegetative pathogens (see list in step 2 above);</p> <p>Presence of spore-forming pathogens.</p> <p>Growth of spore-forming pathogens</p>	<p>No (Presence of vegetative pathogens)</p> <p>Yes (presence of spore-forming pathogens)</p> <p>No (Growth of spore-forming pathogens)</p>	<p>Raw meat/poultry is a known source of pathogens, but receiving SOP makes it unlikely that unacceptably high levels of pathogens are present. Product is labeled to instruct consumers to fully cook product and thereby kill pathogens.</p> <p>Raw meat is a known source of pathogens.</p> <p>Presence of nitrite, relatively short duration, and relatively low temperature make germination of</p>	<p>Hazard will be controlled by this CCP of smoking (prevents growth) and the later CCP of cooling (prevents germination and growth of clostridial spores).</p>	

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	Production of heat-stable enterotoxin by <i>S. aureus</i>	Yes	spores unlikely. Product is labeled to instruct consumers to fully cook product and thereby kill germinated cells.  <i>S. aureus</i> is salt-tolerant and forms a toxin that may not be destroyed during cooking.	This step is a CCP. Time and temperature of smoking will be controlled to prevent <i>S. aureus</i> growth.	CCP 1-B
	Chemical - None	No	SSOP makes hazard unlikely.		
	Physical - None	No	SSOP makes hazard unlikely.		
16. Cooling	Biological - growth of <i>Clostridium perfringens</i> or <i>Clostridium botulinum</i> ;  Recontamination of	Yes (clostridial growth)  No	Spores survive cooking and can germinate and grow if cooling is done too slowly.  Pre-op and	This step is a CCP. Product is cooled rapidly enough to prevent growth of <i>Clostridium perfringens</i> (> 1 log) or <i>Clostridium botulinum</i> .	CCP 2-B

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	product with pathogens  Growth of recontaminating pathogens.	(Recontamination)  No (Growth of L.m. or other pathogens)	Operational SSOPs make contamination unlikely.  Product is refrigerated or frozen (minimizes or prevents pathogen growth)		
	Chemical - None	No			
	Physical - None	No			
17. Slicing and 18. Packaging	Biological - Growth of Clostridium perfringens or Clostridium botulinum;  Recontamination with pathogens;  Growth of recontaminating pathogens.	No (clostridial growth)  No (Presence of L.m. or other pathogens)  No (Growth of L.m. or other pathogens)	Product does not get warm enough for a long enough time during slicing and packaging to result in growth.  Pre-op and operational SSOP make contamination unlikely.  Duration of slicing is short enough to prevent pathogen growth. Product is kept		

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			refrigerated/frozen (minimizes/prevents pathogen growth)		
	Chemical - None	No	SSOP makes hazard unlikely.		
	Physical - metal	No	No history of problem (must provide evidence). Visual inspection of equipment during cleaning makes it unlikely that hazard enters commerce.		
19. Shipping or retail sale	Biological - None	No	SSOP makes hazard unlikely.		
	Chemical - None	No	SSOP makes hazard unlikely.		
	Physical - None	No	SSOP makes hazard unlikely.		

### **Directions for Using the HACCP Plan Form**

1. Examine your Hazard Analysis form to determine which steps are CCP's and what type of hazard (Biological, Chemical, or Physical) each CCP controls.
2. Check to see whether each CCP is already listed on the HACCP Plan Form. If a CCP is not already listed, enter the CCP number and step in the column labeled "CCP # and Location".
3. For CCP's already listed on the model form, examine the Critical Limits listed. In the HACCP Plan Form for some HACCP categories there will be several options for Critical Limits. If this is the case, choose the Critical Limits that will work best in your plant and cross out, white out, or delete the other Critical Limits and the Monitoring Procedures that go with them. It may be helpful to check the "Monitoring Procedures and Frequency" column during your decision-making. For CCP's already on the model form, supporting scientific documentation is already included in your manual.
4. If you are adding a new CCP, you will need to determine the scientifically valid Critical Limits to be used with the CCP. You must also obtain scientific information supporting your choice of Critical Limits. Consult your inspector or university extension specialists for help.
5. Examine the "Monitoring Procedures and Frequency" column for each CCP. If you wish to change the procedure and/or the frequency, check with your inspector or a university extension specialist for help. If a change is OK, you will need to write down your reasoning for making the change and include this reasoning in your HACCP manual.
6. Examine the "HACCP Records" column. If you are using different forms for record-keeping in this HACCP Plan, please put the correct form title(s) in the "HACCP Records" column.
7. The verification activities listed in the "Verification Procedures and Frequency" column are required by the regulation. However, you may choose to do additional activities; for example, for verification, beef jerky samples may be sent to the lab each quarter for water activity and Moisture : Protein Ratio testing. If you do any additional verification activities, enter them in the "Verification Procedures and Frequency" column. If you choose to use a frequency for the required verification activities that is different than the frequency shown, you must provide written justification for the different frequency. Consult your inspector or university extension specialists for help.
8. We suggest that you make no changes in the "Corrective Actions" column. Be sure to have a form for documenting corrective actions that you take. A corrective action form is included in this model.

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CCP # and location	Critical limits	Monitoring procedures and frequency	HACCP RECORDS	Verification procedures and frequency	Corrective actions
1-B Smoking	Product internal temperature will increase from 70°F to 86°F in no more than 50 minutes, from 86°F to 104°F in no more than 60 minutes, and from 104 to 115°F in no more than 50 minutes. Product internal temperature will be maintained at 115°F or higher until cooling begins. Use CCP Monitoring Form #1. Alternatively, product internal temperature cannot be between 50°F and 130°F for more than 6 hours: use CCP Monitoring Form #2; OR critical limits may be obtained using the THERM tool for raw pork containing spices (to be released spring, 2008); must devise new CCP Monitoring Form.	The plant manager or designee will use a calibrated thermometer and a clock, or a time/temperature recorder to determine the internal temperature and time for the largest item in the lot.	CCP Monitoring Form  Corrective Action Log  Thermometer Calibration Log	Establishment owner or designee will review the CCP Monitoring Form, Corrective Action Log, and Thermometer Calibration Log once per week.  Establishment owner or designee will calibrate all thermometers to a known standard monthly. Thermometers will be calibrated to ± 2° F or taken out of operation as stated in the SOP. Calibration actions are recorded in the Thermometer Calibration Log.  Establishment owner or designee will observe monitoring of temperature at least once per month.	If a deviation from a critical limit occurs, the establishment owner or designee is responsible for corrective action protocol as stated in 9 CFR 417.3 1. The cause of the deviation will be identified and eliminated. 2. The CCP will be under control after the corrective action is taken. 3. Measures to prevent recurrence are established. 4. No product that is injurious to health or otherwise adulterated as a result of the deviation will be permitted to enter commerce.
2-B Cooling	Appendix B limits for cured products (internal temperature falls from	The plant manager or designee will use a calibrated thermometer	CCP Monitoring Form	Establishment owner or designee will review the CCP Monitoring Form, Corrective	If a deviation from a critical limit occurs, the

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	<p>130°F to 80°F in no more than 5 hours, and from 80°F to 45°F in no more than 10 hours).</p> <p>Alternatively, if the product is a) formulated so that the finished product contains at least 120 ppm nitrite and at least 3.5% water-phase salt, b) cooled continuously, then the internal temperature cannot be between 120 and 40°F for more than 20 h.</p>	<p>and a clock to determine the internal temperature and time for the largest item in the lot removed from the smokehouse or oven. About 4.5 hours later, this procedure will be repeated with the same item. The procedure will be repeated about 10 hours after the 2<sup>nd</sup> temperature measurement with the same item. This procedure will be performed for every lot.</p>	<p>Corrective Action Log</p> <p>Thermometer Calibration Log</p>	<p>Action Log, and Thermometer Calibration Log once per week.</p> <p>Establishment owner or designee will calibrate all thermometers to a known standard monthly. Thermometers will be calibrated to ± 2° F or taken out of operation as stated in the SOP. Calibration actions are recorded in the Thermometer Calibration Log.</p> <p>Establishment owner or designee will observe monitoring of temperature at least once per month.</p>	<p>establishment owner or designee is responsible for corrective action protocol as stated in 9 CFR 417.3</p> <ol style="list-style-type: none"> <li>1. The cause of the deviation will be identified and eliminated.</li> <li>2. The CCP will be under control after the corrective action is taken.</li> <li>3. Measures to prevent recurrence are established.</li> <li>4. No product that is injurious to health or otherwise adulterated as a result of the deviation will be permitted to enter commerce.</li> </ol>
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**Sign and date at initial acceptance, modification, and annual reassessment.**

Signed _____	Date _____
Signed _____	Date _____
Signed _____	Date _____
Signed _____	Date _____
Signed _____	Date _____

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CCP Monitoring Form #1: Critical Limits are internal product temperatures and times

Date or Lot ID	Smoking List the start time & temperature, and end time and temperature for each step. 1 <sup>st</sup> step: 70 – 86°F 2 <sup>nd</sup> step: 86 – 104°F 3 <sup>rd</sup> step: 104 – 115°F 4 <sup>th</sup> 115F or higher:				Initials	Cooling Temperature/Time Time elapsed since cooling began 0 h                    ≤ 4.5 h                    ≤14.5 h			Initials	Devn. from Critical Limit? (Y = yes → take corrective action, N = no)	Pre-shipment / pre-use review Signature/Date	
	1st	2nd	3rd	4th		1 <sup>st</sup>	2 <sup>nd</sup>	3rd				

**Verification Activities** (for up to three weeks) associated with these batches. Indicate Type of activity: DOT = Direct Observation of Temperature monitoring (monthly), CAL = thermometer calibration, or RR = Records Review (weekly).

Type of activity: \_\_\_\_\_ Type of activity: \_\_\_\_\_ Type of activity: \_\_\_\_\_

Result (✓ or -): \_\_\_\_\_ Result (✓ or -): \_\_\_\_\_ Result (✓ or -): \_\_\_\_\_

**NOTE:** ✓ = in accordance with the HACCP plan. - = not in accordance w/ HACCP plan' take corrective action

Date/Time: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Initials: \_\_\_\_\_ Initials: \_\_\_\_\_ Initials: \_\_\_\_\_

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CCP Monitoring Form #2: Critical Limits are internal product temperatures and times

Date or Lot ID	Smoking				Initials	Cooling			Initials	Devn. from Critical Limit? (Y = yes → take corrective action, N = no)	Pre-shipment / pre-use review	
	For 1 <sup>st</sup> Step: record the last time & temperature when monitoring shows product internal temperature of 50°F or lower. For 2 <sup>nd</sup> Step: record the first time & temperature when monitoring shows product internal temperature of 130 °F or higher.					Temperature/Time Time elapsed since cooling began 0 h                    ≤ 4.5 h            ≤ 14.5 h					Signature/Date	
	1 <sup>st</sup> Step Time	1 <sup>st</sup> Step Temp	2 <sup>nd</sup> Step Time	2 <sup>nd</sup> Step Temp		1 <sup>st</sup>	2 <sup>nd</sup>	3rd				

**Verification Activities** (for up to three weeks) associated with these batches. Indicate Type of activity: DOT = Direct Observation of Temperature monitoring (monthly), CAL = thermometer calibration, or RR = Records Review (weekly).

Type of activity: \_\_\_\_\_ Type of activity: \_\_\_\_\_ Type of activity: \_\_\_\_\_

Result (✓ or -): \_\_\_\_\_ Result (✓ or -): \_\_\_\_\_ Result (✓ or -): \_\_\_\_\_

**NOTE:** ✓ = in accordance with the HACCP plan. - = not in accordance w/ HACCP plan' take corrective action

Date/Time: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Initials: \_\_\_\_\_ Initials: \_\_\_\_\_ Initials: \_\_\_\_\_

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### Corrective Action Log

Product:	Lot ID:
Date / Time:	Responsible Person:
Deviation:	
Cause of Deviation:	
Cause of Deviation Eliminated By:	
CCP Under Control After Corrective Actions Taken:	
Preventative Measures:	
Product Disposition:	

Verification (Records Review) by and Date: \_\_\_\_\_



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### **SOP for Calibration of Thermometer**

Processor or designee will calibrate the thermometers prior to use by following the specifications of the manufacturer of the equipment (this will vary) or the following procedures.

Each thermometer will be assigned an ID number.

Thermometers intended for measuring higher temperature items, such as cooked product, will be calibrated in hot water, while those used for taking lower temperatures will be calibrated in ice water. All thermometers will be calibrated within + or - 2 degrees F.

Thermometers in use will be checked against a certified thermometer during calibration, if available. Otherwise, all thermometers will be calibrated either against each other, or against a thermometer that is used only during calibration. The latter methods would require at least three thermometers for accuracy. Dial thermometers will only be calibrated (and used!) on one end of the range of use, e.g. either the hot end or the cold end. This practice is followed to assure accuracy.

Calibration with ice water:

1. Add crushed ice and water to a clean container to form a watery slush.
2. Place thermometer probe into slush for at least one minute, taking care to not let the probe contact the container.
3. If the thermometer does not read between 30 degrees and 34 degrees F., adjust to 32 degrees. Nonadjustable thermometers will be removed from use until they have been professionally serviced. Thermometers that have been adjusted for 3 consecutive months will be replaced.
4. Record the results, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.

Calibration with hot water:

1. Heat a clean container of water to a temperature in the range of cooked products. Running clean water through the coffee maker gives a water temperature of approximately 145 degrees F.

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Another option is to bring a clean container of water to a rolling boil.

2. Place the thermometer probe into the hot water, along with the certified thermometer and/or reference thermometer, or at least two other thermometers, for at least one minute, taking care not to let the probe contact the container.
3. If the test thermometer does not read within + or - 2 degrees of the reference thermometer, adjust accordingly. If three thermometers are used and one thermometer differs from the other two by more than 2°F, that thermometer shall be adjusted or removed from use. If all three thermometers differ from each other by more than 2°F, a reference thermometer must be used or each thermometer must be calibrated against vigorously boiling water (212°F). Nonadjustable thermometers will be removed from use until they have been professionally serviced. Thermometers that have been adjusted for 3 consecutive months will be replaced.
4. Record the results, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.

Thermometers that cannot be easily calibrated through direct immersion in either ice water or hot water can be calibrated by comparing readings with another calibrated thermometer. Thermometers that may be calibrated in this way include smokehouse probes and room temperature thermometers. When doing this, a recently calibrated thermometer will be used as the reference. Room temperature thermometers that are outside the + or - 2 degree F range will be replaced. Smokehouse probes that are outside the + or - 2 degree F. range will be professionally serviced. Results will be recorded, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.

Thermometers will be calibrated at a frequency dependent on production volumes, and use of monitoring CCP values or SOP values. Any thermometer that has been dropped or abused will be taken out of service until it has been recalibrated. Any "loose" thermometers, or thermometers that have been out of calibration for 3 consecutive months, shall be discarded. Thermometers in use will be checked against a certified thermometer during calibration, if available. Otherwise, all thermometers will be calibrated either against each other, or against a thermometer that is used only during

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calibration. These methods would require a minimum of three thermometers for accuracy. Dial thermometers will not be calibrated on both the high and low ends on the range it is intended to read to assure accuracy.

Thermometers that cannot be easily calibrated through direct immersion in either ice water or hot water can be calibrated by comparing readings with another calibrated thermometer. Thermometers that may be calibrated in this way include room temperature thermometers. When doing this, a recently calibrated thermometer will be used as the reference. Room temperature thermometers that are outside the + or - 2 degree F. range will be replaced. Results will be recorded, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.

Thermometers will be calibrated at a frequency dependent on production volumes, and use of monitoring CCP values or SOP values. Any thermometer that has been dropped or abused will be taken out of service until it has been recalibrated. Any "loose" thermometers, or thermometers that have been out of calibration for 3 consecutive months, shall be disposed of.

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### **SOP for Receiving and Storage**

#### Raw Meat/Poultry and Natural Casings

- We will only accept product from an approved source.
- All containers will be inspected for visible evidence of contamination or damage that may allow contamination. All contaminated or damaged product will be rejected.
- The product temperature will be checked for 2 boxes per load by placing a calibrated thermometer between two wrapped or bagged products or by inserting a cleaned and sanitized (and calibrated) thermometer into the product or between product pieces. Products not warmer than 50°F will be accepted. Products not warmer than 50°F will be accepted. Products that are between 50 and 75°F will either be rejected outright or evaluated. Evaluation may include organoleptic evaluation, review of time/temperature information obtained from the shipper, consulting a process authority, or accepting the product and performing a microbiological analysis. Product should be properly refrigerated/frozen if it is accepted pending the end of the evaluation. If the evaluation indicates that the product could be used to safely make cooked items, it can be accepted and used only in this way. No product with temperature over 75°F will be accepted. All temperatures and evaluations will be recorded on incoming invoices.
- All invoices will be checked, initialed, and kept on file for review.
- Accepted products will be immediately placed on designated racks/shelves in the cooler or freezer.
- All coolers will be maintained to hold a temperature of 41°F or lower, with daily monitoring and documentation.
- All freezers will be maintained to hold a temperature of 0°F or lower, with daily monitoring and documentation.

#### Perishable Non-Meat Ingredients

- We will only accept product from an approved source.
- All containers will be inspected for visible evidence of contamination or damage that may allow contamination. All contaminated or damaged product will be rejected.
- The product temperature will be checked for 2 boxes per load by placing a calibrated thermometer between two wrapped or bagged products or by inserting a cleaned and sanitized (and calibrated) thermometer into the product or between product pieces. Products

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warmer than 50°F will be accepted. Products that are between 50 and 75°F will either be rejected outright or evaluated. Evaluation may include organoleptic evaluation, review of time/temperature information obtained from the shipper, consulting a process authority, or accepting the product and performing a microbiological analysis. Product should be properly refrigerated/frozen if it is accepted pending the end of the evaluation. If the evaluation indicates that the product could be used to safely make cooked items, it can be accepted and used only in this way. No product with temperature over 75°F will be accepted. All temperatures and evaluations will be recorded on incoming invoices.

- All invoices will be checked, initialed, and kept on file for review.
- Accepted products will be immediately placed on designated racks/shelves in the cooler or freezer.
- Perishable non-meat items will be stored separately (different cooler, rack, or shelf) from raw meat/poultry and natural casings.
- All coolers will be maintained to hold a temperature of 41°F or lower, with daily monitoring and documentation.
- All freezers will be maintained to hold a temperature of 0°F or lower, with daily monitoring and documentation.

#### Non-Perishable Non-Meat Ingredients

- We will only accept product from an approved source.
- All containers will be inspected for visible evidence of contamination or damage that may allow contamination. All contaminated or damaged product will be rejected.
- Product containers will be marked with the date of receipt and stored on designated shelves/racks in the dry storage area. The "First In, First Out" principle will be followed in using ingredients.
- The acceptance of the product will be recorded on the incoming product invoice. All invoices will be checked, initialed, and kept on file for review.

#### Packaging Materials, Cleaning Supplies, other non-ingredient items

- We will only accept product from an approved source.
- All containers will be inspected for visible evidence of contamination or damage that may allow contamination. All contaminated or damaged product will be rejected.

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- Product containers will be marked with the date of receipt and stored on designated shelves/racks in the packaging storage area or chemical storage area, as appropriate. The "First In, First Out" principle will be followed in using packaging materials, cleaning supplies, and other non-ingredient items..
- The acceptance of the product will be recorded on the incoming product invoice. All invoices will be checked, initialed, and kept on file for review.

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### **SOP for Finished Product Storage**

- Once meat/poultry items are packaged and labeled, they will be master-packed (if appropriate), and immediately moved into dry storage (jerky and other shelf-stable products), refrigerated storage, or frozen storage.
- All coolers will be maintained to hold a temperature of 41°F or lower, with daily monitoring and documentation.
- All freezers will be maintained to hold a temperature of 0°F or lower, with daily monitoring and documentation.
- Finished raw products will be stored separately from finished Ready-To-Eat (RTE) products, either in separate coolers/freezers/rooms, or on physically separate racks/shelves.
- Finished RTE products will NEVER be stored below finished or unfinished raw products.
- No products (finished or unfinished) will be stored on the floor.

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### **SOP for Tempering/Thawing of Frozen Materials**

1. Place frozen product in a tempering room or cooler that is maintained at 50°F or colder and allow product to thaw or reach desired level of tempering. The following additional time guideline will be followed:
  - If the room temperature is greater than 41°F but not above 50°F, thawed product must be cooled to 41°F or colder within 8 hours of thawing.
2. Alternatively, frozen ground beef or whole chickens may be tempered or thawed at a temperature greater than 50°F but not greater than normal room temperature (72°F) with the following restrictions:
  - Ground beef portions of at least 1 pound in size may be tempered/thawed for up to 9 h.
  - Whole chickens of at least 3.7 pounds in size may be tempered/thawed for up to 9 h.
  - Thawed product must be cooled to 41°F or colder within 2 hours of thawing.
3. Tempering/thawing conditions warmer than 72°F must be evaluated to ensure that the pathogenic bacterial growth will not occur on the products.
4. The tempering/thawing product will be monitored on a scheduled basis to prevent product drip and loss of package integrity, and to ensure that product drip does not contaminate other products.
5. The product surface temperature will be monitored and documented on a scheduled basis to ensure that the guidelines listed above are met.
6. When possible, the outer layer of trim and/or pieces being thawed will be removed and refrigerated. This process will be repeated as often as necessary to ensure that the outer surface of the thawing mass is not held for an unsafe length of time at temperatures that could allow pathogen growth.
7. The lot code of frozen product that has been purchased from an outside vendor will be recorded on a batch sheet or production log) before tempering/thawing) for use in product tracking if the vendor institutes a recall.

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