



REVISED JUNE 2017

Commercial Processing Example: *Shrimp (Wild), Cooked, Frozen*

Example: This is a Special Training Model for illustrative purposes only. The SHA models are based on guidance contained in FDA’s *Fish and Fishery Products Hazards and Control Guidance* (4th Edition, 2011) and additional information available since the 2011 edition. It was produced by the National Seafood HACCP Alliance (SHA) strictly as an example for training. This Model does not represent a specific requirement or recommendation from FDA. Keep in mind that this model may not apply to all situations.

Narrative

Company	ABC Shrimp Company, Anywhere, USA
Market Name	Shrimp (<i>Penaeus</i> spp)
Source of Fishery Product	Wild-caught shrimp; purchased directly from fisherman.
Describe the Food	Cooked, headless, shell-on, individually quick frozen; packed in heat sealed plastic bags (reduced oxygen packaging)
Method of Receiving, Storage and Distribution	Received on ice, stored on ice and subsequently frozen and distributed frozen
Finished Packaging Type	Heat sealed bags – reduced oxygen packaged
Intended Use and Consumer	Cooked ready-to-eat product, to be consumed by the general public

Description of Process:

Receive raw shrimp – Fresh raw shrimp are purchased directly from local boats that may be out for up to 18 hours. The shrimp are deheaded at sea and are treated with sulfiting agents (i.e., sodium bisulfite and/or sodium metabisulfite dips) to inhibit black spot formation (melanosis). The shrimp are stored on ice on the boat. The iced shrimp are off-loaded from the boat at the plant’s dock. At receipt, the raw shrimp are de-iced, weighed and assigned an individual lot number. Receiving time is approximately 15 minutes or less.

Refrigerated storage - The shrimp are placed in insulated plastic totes with fresh ice and moved to refrigerated storage. Ice is refreshed daily by topping the totes. Shrimp may remain in refrigerated storage for up to 48 hours prior to processing.

Receive packaging materials – Packaging is pre-labeled rollstock, which is an oxygen barrier film. Packaging materials are delivered in clean, well-maintained and covered vehicles. All materials are checked for integrity and order specifications. Then they are assigned lot numbers.

Dry-store packaging materials - All materials are checked for integrity and order specifications. Then they are

assigned lot numbers and placed in a dry storage room.

De-ice/Size grading - Shrimp are removed from refrigerated storage and placed inside a hopper where it gets de-iced and conveyed directly to a size grader. The size grader mechanically sizes the shrimp by passing them over a series of inclined rollers set to segregate individual shrimp by differences in thickness. As the shrimp cascade through the rollers, the various sizes are diverted by chutes into baskets. The baskets of various sizes of shrimp are placed in separate totes. De-icing and grading typically take less than 30 minutes per lot. Totes of graded shrimp are typically rolled to the cooking room for immediate cooking.

Temporary refrigerated storage –Occasionally, graded shrimp are iced and returned to refrigerated storage for up to 48 hours until they can be cooked.

Cook - Cooking occurs in a segregated area to control personnel and product traffic subject to Sanitation Control Procedures (SCP). The graded shell-on shrimp pass through a continuous steam cooker. The cooker’s conveyor belt is equipped with flips to tumble the shrimp, ensuring a thorough uniform cook. The cook process time

and temperature is based on a pre-established and validated study that demonstrates that steaming shrimp at 212° F (100° C) for 3 minutes in this validated cooker will achieve an internal product temperature of 165° F (74° C) for 36 seconds to kill *Listeria monocytogenes*. It takes less than 30 minutes to cook all the shrimp in an assigned batch. The validation applies to refrigerated shrimp no larger than 30 count (30 individual shrimp per pound).

Cool and inspect - As cooked shrimp exit the cooker, they move on a conveyor belt to a cooling station where cold-water is sprayed on the product. After the cold water spray, workers inspect the shrimp and remove pieces and other defective product which are diverted to a non-food use. The cooling and inspection step is part of a continuous process that typically takes less than 5 minutes.

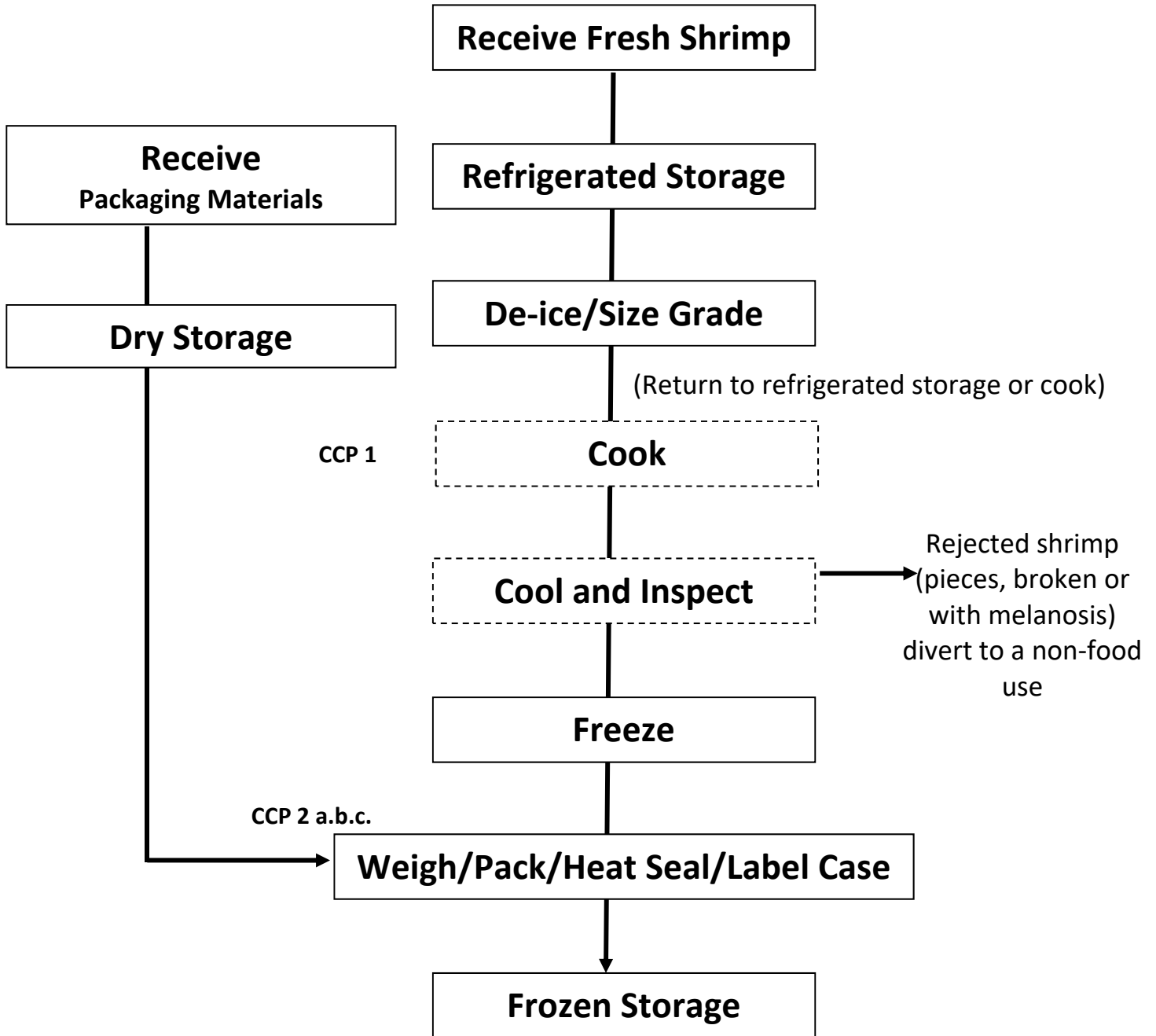
Freeze – Shrimp move by conveyor into a spiral freezer, which is a continuous freezing process that typically takes no more than 20 minutes.

Weigh/Pack/Seal/Label/Case - After freezing, the finished product is conveyed to the packing station where the product is weighed, packed, heat-sealed and labeled in an automated packaging line. A computerized system weighs the correct amount of product and bags it in pre-labeled bagging material. Rolls of bags are loaded into the packaging machine. Each primary package is identified by the production date code, lot number and proper ingredient labeling. All primary packages are master-cased as required by the customer. Each master case is marked with identical production date codes and lot numbers as used on the primary packages. As each master case is packed, it is palletized immediately in accordance with customer or company criterion. This is a short step that typically takes less than 30 minutes.

Frozen storage - All finished product pallets are placed immediately into frozen storage. All finished product inventory is distributed on a first-in/first-out basis.

ABC Shrimp Company (Wild) Process Flow Diagram

Shrimp (Wild), Cooked, Frozen



Key: Dashed lines (-----) indicate segregated area subject to SCP monitoring.

Commercial Processing Example: *Shrimp (Wild), Cooked, Frozen*

Example: For Illustrative Purposes Only. Models are based in current guidance contained in FDA’s *Fish and Fishery Products Hazards and Control Guidance*. Keep in mind that this model does not apply to all situations.

Description	Company: ABC Shrimp Company																					
	Where Product Is Purchased			How Product Is Received				How Product Is Stored				How Product Is Shipped				How Product is Packaged		How Product Will Be Consumed			Intended Consumer	
	From Fisherman	From Fish Farm	From Processor	Refrigerated	Iced	Frozen	Shelf-Stable	Refrigerated	Iced	Frozen	Shelf-Stable	Refrigerated	Iced	Frozen	Shelf-Stable	Air Packed	ROP*	Raw to be cooked	Raw RTE*	Cooked RTE*	General Public	At Risk Population
Common Name: <i>Shrimp (wild)</i> Market Name: <i>Shrimp</i> Scientific Name: <i>Penaeus spp.</i>	√				√				√	√							√			√	√	

Potential Food Safety Hazards: All potential food safety hazards based on the product description and processing flow diagram associated with this product and process are identified using Tables 3-3 (species-related hazards) and 3-4 (process-related hazards) in the FDA *Fish and Fishery Products Hazards and Control Guidance* (2011 edition). Processors should be aware that additional guidance may be periodically posted on FDA Seafood HACCP Websites, and additional hazards not covered by this guidance may be relevant to certain products under certain circumstances. Pathogenic bacteria growth (thermal abuse during processing) – (process-related, chapter 12).

The FDA recommendations indicate 6 potential hazards that are species or process related. Each potential hazard must be addressed in the Hazard Analysis. The hazard analysis considers all 6 hazards in an inclusive assessment through each processing step.

1. Pathogenic bacteria growth (thermal abuse during processing) – (process-related, chapter 12)
2. Clostridium botulinum toxin formation (anaerobic packaging) – (process-related, chapter 13)
3. Pathogen survival through cooking (improper cooking) – (process-related, chapter 16)
4. Food Additives (use of sulfites to control melanosis) – (process-related, chapter 19)
5. Food Allergens (natural) – (process-related, chapter 19)
6. Metal Inclusion (if used in packaging) – (process-related, chapter 20)

SANITATION CONTROL PROCEDURES (SCP) are monitored throughout all processing steps and the daily SCP records accompany the HACCP records.

Hazard Analysis Worksheet

Firm Name: <i>ABC Shrimp Company</i>	Finished Product Description: <i>Shrimp (wild), cooked, frozen in reduced oxygen package.</i>
Firm Address: <i>Anywhere, USA</i>	Method of Storage & Distribution: <i>Frozen</i>
Intended Use & Consumer: <i>Ready-to-eat product to be consumed by the general public without further cooking.</i>	

(1) Processing Step	(2) List all potential food safety hazards that could be associated with this product and process.	(3) Is the potential food safety hazard significant (introduced, enhanced or eliminated) at this step? (Yes or No)	(4) Justify the decision that you made in column 3	(5) What control measure(s) can be applied to prevent this significant hazard?	(6) Is this step a Critical Control Point? (Yes or No)
Receive Packaging Materials	Pathogenic bacteria growth – temperature abuse	No	Pathogens not likely to grow on packaging		
	<i>C. botulinum</i> toxin	No	<i>C. bot.</i> not present in packaging materials		
	Pathogen survival through cooking	No	Cooking not involved at this step		
	Food additives	No	No prior exposure to food additives		
	Food allergens	No	Packaging materials do not introduce allergens		
	Metal inclusion	No	Not reasonably likely in packaging materials		
Dry Storage	Pathogenic bacteria growth – temp. abuse	No	Pathogens not likely to grow in packaging materials		
	<i>C. botulinum</i> toxin	No	Presence or growth of <i>C. bot.</i> not likely		
	Pathogen survival through cooking	No	Cooking not involved at this step		
	Food additives	No	No prior exposure to food additives		
	Food allergens	No	Dry storage does not introduce allergens		
	Metal inclusion	No	Not reasonably likely during dry storage		
Receive Raw Shrimp	Pathogenic bacteria growth – temperature abuse	Yes	Pathogens can be present on raw shrimp and grow if time and temperature abuse occurs during harvest and shipment	Pathogens will be eliminated (killed) at the cooking step	No
	<i>C. botulinum</i> toxin	No	Product not in reduced oxygen environment at this step		

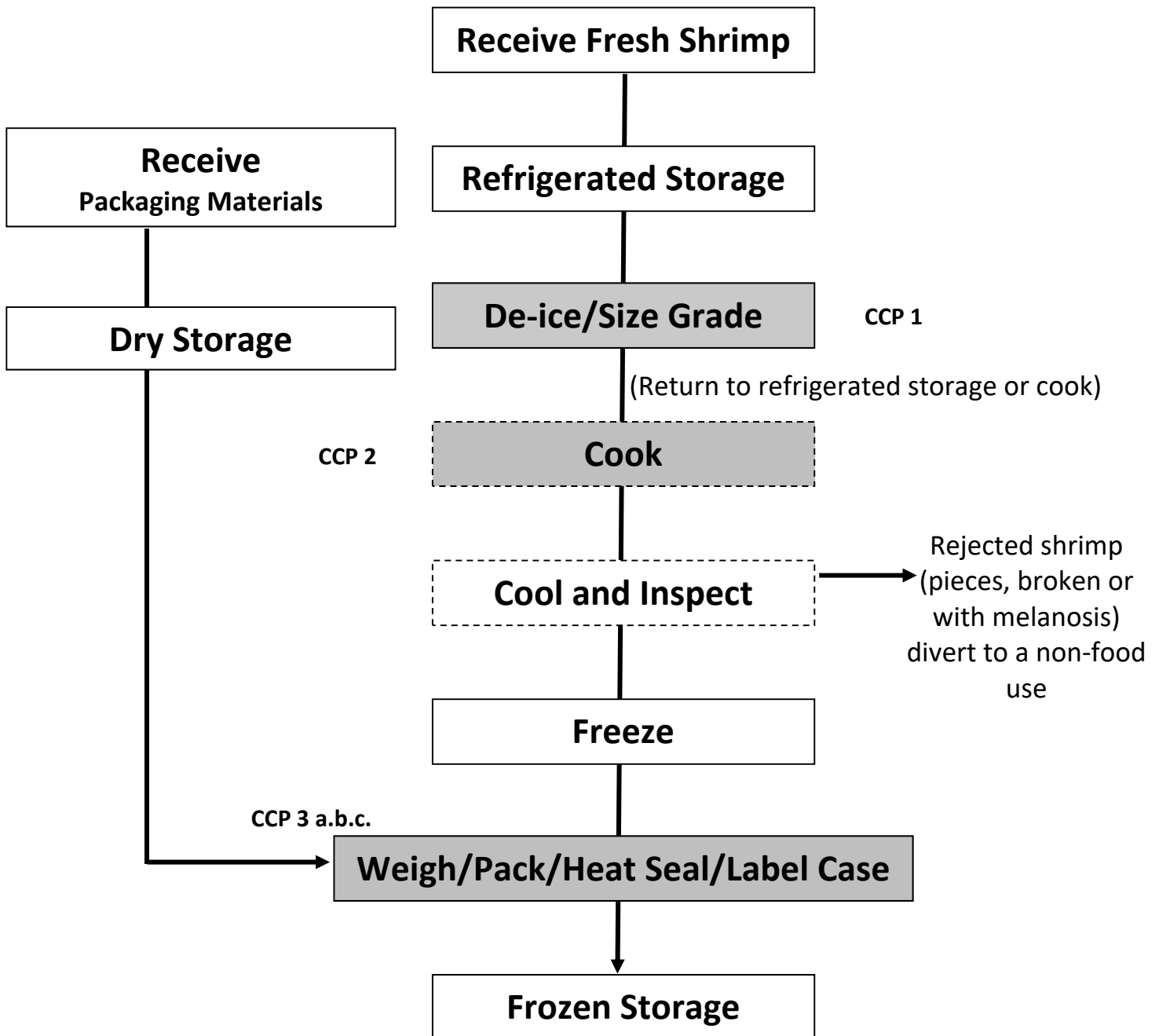
(1) Processing Step	(2) List all potential food safety hazards that could be associated with this product and process.	(3) Is the potential food safety hazard significant (introduced, enhanced or eliminated) at this step? (Yes or No)	(4) Justify the decision that you made in column 3	(5) What control measure(s) can be applied to prevent this significant hazard?	(6) Is this step a Critical Control Point? (Yes or No)
	Pathogen survival through cooking	No	Cooking not involved at this step		
	Food additives –sulfites	Yes	Sulfites are used by raw shrimp suppliers	Product label applied at weigh/pack/seal/label/case step will identify sulfites	No
	Food allergens	Yes	Shrimp is a food allergen; hazard introduced at receiving	Product label applied at weigh/pack/seal label/case step will identify shrimp	No
	Metal inclusion	No	Not likely to occur at this step		
Refrigerated Storage	Pathogenic bacteria growth – temperature abuse	Yes	Pathogens could grow if time and temperature abuse occurs in storage	Pathogens will be eliminated (killed) at the cooking step	No
	<i>C. botulinum</i> toxin	No	Product not in reduced oxygen environment at this step		
	Pathogen survival through cooking	No	Cooking not involved at this step		
	Food additives	No	Food additives including sulfites not introduced at this step		
	Food allergens	Yes	Shrimp is a food allergen; hazard introduced at receiving	Product label applied at weigh/pack/seal label/case step will identify shrimp	No
	Metal inclusion	No	Introduction of metal fragments not reasonably likely at this step		
De-Ice/Size Grade	Pathogenic bacteria growth – temperature abuse	No	Pathogens not likely to grow because of short time at this step; shrimp to be cooked		
	<i>C. botulinum</i> toxin	No	Product not in reduced oxygen environment at this step		
	Pathogen survival through cooking	Yes	Cooking not involved at this step, but grading necessary to assure shrimp size (>30 count/lb.)for validated cooking method	Proper grading for shrimp size	Yes
	Food additives - sulfites	No	Additional food additives including sulfites not introduced at this step		
	Food allergens	Yes	Shrimp is a food allergen; hazard introduced at receiving	Product label applied at weigh/pack/seal label/case step will identify shrimp	No
	Metal inclusion	No	Introduction of metal fragments not reasonably likely at this step		

(1) Processing Step	(2) List all potential food safety hazards that could be associated with this product and process.	(3) Is the potential food safety hazard significant (introduced, enhanced or eliminated) at this step? (Yes or No)	(4) Justify the decision that you made in column 3	(5) What control measure(s) can be applied to prevent this significant hazard?	(6) Is this step a Critical Control Point? (Yes or No)
Cook	Pathogenic bacteria growth – temperature abuse	Yes	Pathogens present from previous steps will be controlled (eliminated) at this step	Cook all shrimp using a time and temperature combination that will eliminate pathogens	Yes
	<i>C. botulinum</i> toxin	No	Product not in reduced oxygen environment at this step		
	Pathogen survival through cooking	Yes	Shrimp must be cooked properly to eliminate (kill) all pathogens	Cook all shrimp using a time & temperature that will kill pathogens	Yes
	Food additives - sulfites	No	Additional food additives including sulfites not introduced at this step		
	Food allergens	Yes	Shrimp is a food allergen; hazard introduced at receiving	Product label applied at weigh/pack/seal/label/case step will identify shrimp	No
	Metal inclusion	No	Introduction of metal fragments not reasonably likely at this step		
Cool and Inspect	Pathogenic bacteria growth – temperature abuse	No	Pathogenic bacteria growth is minimized because step is continuous and time at step is short; subject to SCP monitoring		
	<i>C. botulinum</i> toxin	No	Product not in reduced oxygen environment		
	Pathogen survival through cooking	No	Controlled at the cook step		
	Food additives	No	Additional food additives including sulfites not introduced at this step		
	Food allergens	Yes	Shrimp is a food allergen; hazard introduced at receiving	Product label applied at weigh/pack/seal/label/case step will identify shrimp	No
	Metal inclusion	No	Introduction of metal fragments not reasonably likely at this step		
Freeze	Pathogenic bacteria growth – temperature abuse	No	Pathogens not likely to grow at freezing temperature		
	<i>C. botulinum</i> toxin	No	Product not in reduced oxygen environment at this step		
	Pathogen survival through cooking	No	Controlled at the cook step		
	Food additives	No	Additional food additives including sulfites not introduced at this step		

(1) Processing Step	(2) List all potential food safety hazards that could be associated with this product and process.	(3) Is the potential food safety hazard significant (introduced, enhanced or eliminated) at this step? (Yes or No)	(4) Justify the decision that you made in column 3	(5) What control measure(s) can be applied to prevent this significant hazard?	(6) Is this step a Critical Control Point? (Yes or No)
	Food allergens	Yes	Shrimp is a food allergen; hazard introduced at receiving	Product label applied at weigh/pack/seal label/case step will identify shrimp	No
	Metal Inclusion	No	Introduction of metal fragments not reasonably likely at this step		
Weigh/Pack/Seal/Label/Case	Pathogenic bacteria growth – temperature abuse	No	Pathogens not likely to grow in frozen shrimp and time at this step is short		
	<i>C. botulinum</i> toxin	Yes	Product is placed in a reduced oxygen package at this step which could allow toxin to form if not kept frozen.	Controlled at this step by making sure that package label contains a “keep frozen/thaw under refrigeration” statement	Yes
	Pathogen survival through cooking	No	Controlled at the cook step		
	Food additives	Yes	Shrimp contain sulfites; introduced at Receiving	Finished product label must declare “sulfites” on label	Yes
	Food allergens	Yes	Shrimp is a food allergen	Finished product label will contain the word “shrimp” on the label	Yes
	Metal inclusion	No	Introduction of metal fragments not reasonably likely at this step		
Frozen Storage	Pathogenic bacteria growth – temperature abuse	No	Pathogens not likely to grow at freezer temp.		
	<i>C. botulinum</i> toxin	No	Controlled at weigh/pack/seal/label/ case step		
	Pathogen survival through cooking	No	Controlled at the cook step		
	Food additives-sulfites	No	Not reasonably likely to occur; the additive sulfites was already labeled at the weigh/pack/seal/label/ case step		
	Food allergens	No	Not reasonably likely to occur; the allergen shrimp was already labeled at the prior weigh/pack/seal/case step.		
	Metal inclusion	No	Introduction of metal fragments not reasonably likely at this step		

ABC Shrimp Company (Wild) Process Flow Diagram

Shrimp (Wild), Cooked, Individual Quick Frozen
(Shaded steps indicate critical control points)



Key: Dashed lines (-----) indicate segregated area subject to SCP monitoring.

HACCP Plan Form

Firm Name <i>ABC Shrimp Company</i>	Product Description <i>Shrimp (Wild), Cooked, Frozen in reduced oxygen package</i>
Firm Location <i>Anywhere USA</i>	Method of Storage & Distribution <i>Frozen</i>
	Intended Use & Consumer <i>Ready-to-eat product, to be consumed by the general public without further cooking</i>

Critical Control Point (CCP)	CCP 1: GRADING
Significant Hazard(s)	Pathogen bacteria growth due to temperature abuse and pathogen survival through cooking
Critical Limits for each Control Measure	Graded shrimp must be 30 count/lb. or smaller to comply with validated cooking method.
Monitoring	What Grade shrimp size
	How Measure resulting shrimp size from grader
	When Check shrimp size for every batch graded
	Who Assigned Coordinator for Grading Operations
Corrective Action	IF shrimp larger than 30 count/lb. THEN regrade for proper size. To regain control evaluate and document the cause for improper grading, adjust the graders. Make necessary adjustments for proper grading. If necessary, fix or replace errant grader, and retrain involved staff.
Verification	Daily review and signature for grading logs and correction actions records.
Records	Daily cooking logs with continuous and visual checks for shrimp size. Process and equipment Validation Report. PLUS training records for Coordinator for Grading Operations

Signature:	Date:
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HACCP Plan Form

Firm Name <i>ABC Shrimp Company</i>	Product Description <i>Shrimp (Wild), Cooked frozen in reduced oxygen package</i>
Firm Location <i>Anywhere USA</i>	Method of Storage & Distribution <i>Frozen</i>
	Intended Use & Consumer <i>Ready-to-eat product, to be consumed by the general public without further cooking</i>

Critical Control Point (CCP)	CCP 2: COOK								
Significant Hazard(s)	Pathogen bacteria growth due to temperature abuse and pathogen survival through cooking								
Critical Limits for each Control Measure	Steam cooking temperature at minimum of 212°F (100°C) for minimum of 3 minutes exposure								
Monitoring	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; padding: 5px;">What</td> <td style="padding: 5px;">Cooker temperature and total exposure time based on conveyer speed through cooker for shrimp 30 count/lb. or smaller</td> </tr> <tr> <td style="padding: 5px;">How</td> <td style="padding: 5px;"> <ol style="list-style-type: none"> 1. Continuous temperature recorder per batch 2. Stopwatch to monitor time for test block to move through the equipment 3. Proper shrimp size (smaller than 30 count/lb.) </td> </tr> <tr> <td style="padding: 5px;">When</td> <td style="padding: 5px;"> <ol style="list-style-type: none"> 1. Continuous recordings, and visual checks at least twice per day 2. Conveyor belt speed measured once per day and when the conveyer speed is adjusted 3. Recheck shrimp size for every lot </td> </tr> <tr> <td style="padding: 5px;">Who</td> <td style="padding: 5px;">Assigned Coordinator for Cooking Operations</td> </tr> </table>	What	Cooker temperature and total exposure time based on conveyer speed through cooker for shrimp 30 count/lb. or smaller	How	<ol style="list-style-type: none"> 1. Continuous temperature recorder per batch 2. Stopwatch to monitor time for test block to move through the equipment 3. Proper shrimp size (smaller than 30 count/lb.) 	When	<ol style="list-style-type: none"> 1. Continuous recordings, and visual checks at least twice per day 2. Conveyor belt speed measured once per day and when the conveyer speed is adjusted 3. Recheck shrimp size for every lot 	Who	Assigned Coordinator for Cooking Operations
	What	Cooker temperature and total exposure time based on conveyer speed through cooker for shrimp 30 count/lb. or smaller							
	How	<ol style="list-style-type: none"> 1. Continuous temperature recorder per batch 2. Stopwatch to monitor time for test block to move through the equipment 3. Proper shrimp size (smaller than 30 count/lb.) 							
	When	<ol style="list-style-type: none"> 1. Continuous recordings, and visual checks at least twice per day 2. Conveyor belt speed measured once per day and when the conveyer speed is adjusted 3. Recheck shrimp size for every lot 							
Who	Assigned Coordinator for Cooking Operations								
Corrective Action	<p>IF shrimp larger than 30 count/lb. THEN replace with proper size before cooking or recook.</p> <p>IF cooking temperature or exposure time is less than the critical limits, THEN re-cook the affected product to suit the required critical limits.</p> <p>OR when re-cooking is not feasible, the affected product should be discarded and not mixed or sold with properly cooked products.</p> <p>To regain control, evaluate and document the cause for improper cooking and make necessary adjustments for proper grading and cooking temperature and exposure time before continuing with additional cooking. Retrain involved staff.</p>								
Verification	<p>Daily review and signature for cooking logs and corrective actions records; Daily accuracy checks and annual calibration checks for the cooker temperature recording devices; PLUS prior cooker validation for cook performance.</p> <p>(Cook performance should demonstrate the steam cooker provides a uniform 212°F/100°C cook for 3 minutes to achieve an internal product temperature of at least 165°F/73.9°C for 36 seconds necessary to kill <i>Listeria monocytogenes</i> for all shrimp sizes according to FDA <i>Hazards and Controls Guidance</i> Table #A-3 in Appendix 4.) This validation for ABC World Shrimp Company is for shrimp no larger than 30 count/pound.</p>								
Records	Daily cooking logs with continuous and visual checks for shrimp size, cook temperatures and belt speeds (exposure times); and cook thermometer accuracy and calibration logs. Process and equipment Validation Report. PLUS training records for Coordinator for Cooking Operations								

Signature:	Date:
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HACCP Plan Form

Firm Name <i>ABC Shrimp Company</i>	Product Description <i>Shrimp (Wild), Cooked, frozen in reduced oxygen package</i>
Firm Location <i>Anywhere USA</i>	Method of Storage & Distribution <i>Frozen</i>
	Intended Use & Consumer <i>Ready-to-eat product, to be consumed by the general public without further cooking</i>

Critical Control Point (CCP)	CCP 3a: WEIGH/PACK/ SEAL/LABEL/ CASE
Significant Hazard(s)	Food Additives– Sulfites
Critical Limits for each Control Measure	All finished product labels will include “sulfite” in the ingredient list.
Monitoring	What Finished product labels
	How Visual examination of the finished product labels and product formula (ingredient statements)
	When Representative number of packaged and labeled units per lot
	Who Assigned Coordinator for Packaging
Corrective Action	<p>IF the packaged units do not have labels or labels with ‘sulfites’ listed in the ingredients statement; THEN Identify, segregate and relabel the improperly labeled packages.</p> <p>Determine the cause for the problem and correct by removing and destroying the supply of incorrect labels and reviewing the label specifications with the label supplier.</p> <p>Retrain involved staff.</p>
Verification	Weekly review of packing log records and corrective action records; and annual review of label specifications, OR whenever labels are changed or replaced
Records	Packing Report logs and corrective actions; PLUS copy of correct labels and label specifications; PLUS training records for Coordinator for Packing.

Signature:	Date:
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HACCP Plan Form

Firm Name <p style="text-align: center;"><i>ABC Shrimp Company</i></p>	Product Description <p style="text-align: center;"><i>Shrimp (Wild), Cooked, frozen in reduced oxygen package</i></p>
Firm Location <p style="text-align: center;"><i>Anywhere USA</i></p>	Method of Storage & Distribution <i>Frozen</i>
	Intended Use & Consumer <i>Ready-to-eat product, to be consumed by the general public without further cooking</i>

Critical Control Point (CCP)	CCP 3b: WEIGH/PACK/ SEAL/LABEL/ CASE
Significant Hazard(s)	Food Allergens
Critical Limits for each Control Measure	All finished product labels will include “shrimp” in the ingredient list.
Monitoring	What Finished product labels
	How Visual examination of the finished product labels and product formula (ingredient statements)
	When Representative number of packaged and labeled units per lot
	Who Assigned Coordinator for Packaging
Corrective Action	<p>IF the packaged units do not have labels or labels with ‘shrimp’ listed in the ingredients statement; THEN Identify, segregate and relabel the improperly labeled packages.</p> <p>Determine the cause for the problem and correct by removing and destroying the supply of incorrect labels and reviewing the label specifications with the label supplier. Retrain involved staff.</p>
Verification	Weekly review of packing log records and corrective action records; and annual review of label specifications, OR whenever labels are changed or replaced
Records	Packing Report logs and corrective actions; PLUS copy of correct labels and label specifications; PLUS training records for Coordinator for Packing.

Signature:	Date:
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HACCP Plan Form

Firm Name <p style="text-align: center;"><i>ABC Shrimp Company</i></p>	Product Description <p style="text-align: center;"><i>Shrimp (Wild), Cooked, frozen in reduced oxygen package</i></p>
Firm Location <p style="text-align: center;"><i>Anywhere USA</i></p>	Method of Storage & Distribution <i>Frozen</i>
	Intended Use & Consumer <i>Ready-to-eat product, to be consumed by the general public without further cooking</i>

Critical Control Point (CCP)	CCP 3c: WEIGH/PACK/ SEAL/LABEL/ CASE								
Significant Hazard(s)	<i>C. botulinum</i> toxin								
Critical Limits for each Control Measure	All finished product labels will include a statement that says “Important: keep frozen until used, thaw under refrigeration immediately before use”.								
Monitoring	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">What</td> <td style="padding: 5px;">Finished product labels for presence of ‘keep frozen’ statement</td> </tr> <tr> <td style="padding: 5px;">How</td> <td style="padding: 5px;">Visual examination of the finished product labels</td> </tr> <tr> <td style="padding: 5px;">When</td> <td style="padding: 5px;">Representative number of packaged and labeled units per lot</td> </tr> <tr> <td style="padding: 5px;">Who</td> <td style="padding: 5px;">Assigned Coordinator for Packaging</td> </tr> </table>	What	Finished product labels for presence of ‘keep frozen’ statement	How	Visual examination of the finished product labels	When	Representative number of packaged and labeled units per lot	Who	Assigned Coordinator for Packaging
	What	Finished product labels for presence of ‘keep frozen’ statement							
	How	Visual examination of the finished product labels							
	When	Representative number of packaged and labeled units per lot							
Who	Assigned Coordinator for Packaging								
Corrective Action	<p>IF the packaged units do not have a keep frozen statement; THEN Identify, segregate and relabel the improperly labeled packages.</p> <p>Determine the cause for the problem and correct by removing and destroying the supply of incorrect labels and reviewing the label specifications with the label supplier to prevent future failures.</p> <p>Retrain involved staff.</p>								
Verification	Weekly review of packing log records and corrective action records; and annual review of label specifications, OR whenever labels are changed or replaced								
Records	Packing Report logs and corrective actions; PLUS copy of correct labels and label specifications; PLUS training records for Coordinator for Packing.								

Signature:	Date:
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HACCP Plan Form (*landscape format*)

Firm Name <i>ABC Shrimp Company</i>	Product Description <i>Cooked frozen shrimp in reduced oxygen package</i>
Firm Location <i>Anywhere USA</i>	Method of Storage & Distribution <i>Frozen</i>
	Intended Use & Consumer <i>Ready-to-eat product, to be consumed by the general public without further cooking</i>

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
Grading	Pathogen bacteria growth due to temperature abuse and pathogen survival through cooking	Graded shrimp must be 30 count/lb. or smaller to comply with validated cooking method.	Grade shrimp size	Measure resulting shrimp size from grader	Check shrimp size for every batch graded	Assigned Coordinator for Grading Operations	<p>IF shrimp larger than 30 count/lb. THEN regrade for proper size.</p> <p>To regain control, evaluate and document the cause for improper grading, adjust the graders. Make necessary adjustments for proper grading. If necessary, fix or replace errant grader, and retrain involved staff.</p>	Daily review and signature for grading logs and correction actions records.	Daily grading logs with continuous and visual checks for shrimp sizes. Process and equipment Validation Report. PLUS training records for Coordinator for Grading Operations.
Cook	Pathogen bacteria growth due to temperature abuse and pathogen survival through cooking	Steam cooking temperature at minimum of 212°F (100°C) for minimum of 3 minutes exposure	Cooker temperature and total exposure time based on conveyer speed through cooker for shrimp 30 count/lb. or smaller	<ol style="list-style-type: none"> 1. Continuous temperature recorder per batch 2. Stopwatch to monitor time for test block to move through the equipment 3. Proper shrimp size 	<ol style="list-style-type: none"> 1. Continuous recordings, and visual checks at least twice per day 2. Conveyer belt speed measured once per day and when the conveyer speed is adjusted 3. Recheck shrimp size for 	Assigned Coordinator for Cooking Operations	<p>IF shrimp larger than 30 count/lb. THEN replace with proper size before cooking or recook.</p> <p>IF cooking temperature or exposure time is less than the critical limits, THEN re-cook the affected product to suit the required critical limits.</p> <p>OR when re-cooking is not feasible, the</p>	<p>Daily review of cook monitoring and corrective action records</p> <p>Daily accuracy check of cooker temperature recording device</p> <p>Annual calibration of cooker temperature recording device</p> <p>Process and equipment validation study (on-file) Daily review and signature</p>	<p>Daily cooking logs with continuous and visual checks for shrimp size, cook temperatures and belt speeds (exposure times);</p> <p>AND cook thermometer accuracy and calibration logs.</p> <p>Process and equipment Validation Report.</p>

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
				(>30 count/lb.)	every lot		<p>affected product should be discarded and not mixed or sold with properly cooked products.</p> <p>To regain control, evaluate and document the cause for improper cooking and make necessary adjustments for proper grading and cooking temperature and exposure time before continuing with additional cooking. Retrain involved staff.</p>	<p>for cooking logs and corrective actions records; Daily accuracy checks and annual calibration checks for the cooker temperature recording devices;</p> <p>PLUS prior cooker validation for cook performance.</p> <p>(Cook performance should demonstrate the steam cooker provides a uniform 212°F/100°C cook for 3 minutes to achieve an internal product temp of at least 165°F/73.9°C for 36 seconds necessary to kill <i>Listeria monocytogenes</i> for all shrimp sizes according to FDA <i>Hazards and Controls Guidance</i> Table #A-3 in Appendix 4.) This validation for ABC World Shrimp Company is for shrimp no larger than 30 count/pound.</p>	PLUS training records for Coordinator for Cooking Operations

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
Weigh/ Pack/ Seal/ Label/ Case	Food Additives – Sulfites	All finished product labels will include “sulfite” in the ingredient list.	Finished product labels	Visual examination of the finished product labels and product formula (ingredient statement).	Representative number of packaged and labeled units per lot	Assigned Coordinator for Packaging	<p>IF the packaged units do not have labels or labels with ‘sulfites’ listed in the ingredients statement;</p> <p>THEN Identify, segregate and relabel the improperly labeled packages.</p> <p>Determine the cause for the problem and correct by removing and destroying the supply of incorrect labels and reviewing the label specifications with the label supplier.</p> <p>Retrain involved staff.</p>	<p>Weekly review of packing log records and corrective action records; and annual review of label specifications,</p> <p>OR whenever labels are changed or replaced</p>	<p>Packing Report logs and corrective actions; PLUS copy of correct labels and label specifications;</p> <p>PLUS training records for Coordinator for Packing.</p>
Weigh/ Pack/ Seal/ Label/ Case	Food Allergens	All finished product labels will include “shrimp” in the ingredient list.	Finished product labels	Visual examination of the finished product labels and product formula (ingredient statement).	Representative number of packages from each lot of a finished product.	Assigned Coordinator for Packaging	<p>IF the packaged units do not have labels or labels with ‘shrimp’ listed in the ingredients statement;</p> <p>THEN Identify, segregate and relabel the improperly labeled packages.</p> <p>Determine the cause for the problem and correct by removing and destroying the supply of incorrect labels and reviewing the label specifications with the label supplier.</p> <p>Retrain involved staff.</p>	<p>Weekly review of packing log records and corrective action records; and annual review of label specifications,</p> <p>OR whenever labels are changed or replaced</p>	<p>Packing Report logs and corrective actions; PLUS copy of correct labels and label specifications;</p> <p>PLUS training records for Coordinator for Packing.</p>

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
Weigh/ Pack/ Seal/ Label/ Case	<i>C. botulinum</i> toxin	All finished product labels will include a statement that says "Important: keep frozen until used, thaw under refrigeration immediately before use".	Finished product labels for presence of "keep frozen" statement	Visual examination of the finished product labels	Representative number of packaged and labeled units per lot	Assigned Coordinator for Packaging	<p>IF the packaged units do not have a keep frozen statement;</p> <p>THEN Identify, segregate and relabel the improperly labeled packages.</p> <p>Determine the cause for the problem and correct by removing and destroying the supply of incorrect labels and reviewing the label specifications with the label supplier to prevent future failures.</p> <p>Retrain involved staff.</p>	<p>Weekly review of packing log records and corrective action records; and annual review of label specifications,</p> <p>OR whenever labels are changed or replaced</p>	<p>Packing Report logs and corrective actions;</p> <p>PLUS copy of correct labels and label specifications;</p> <p>PLUS training records for Coordinator for Packing</p>

Signature:

Date: