



REVISED SEPTEMBER 2017

## Commercial Processing Example: Oyster Shellstock

**Example:** This is a Special Training Model for illustrative purposes only. The SHA models for molluscan shellfish are based on requirements in the National Shellfish Sanitation Program Model Ordinance (NSSP; searched Aug. 2016) and the 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. Keep in mind that this model may not apply to all situations.

### Narrative

<b>Company</b>	ABC Oyster Company, Anywhere, USA
<b>Market Name</b>	Oysters ( <i>Crassostrea virginica</i> )
<b>Source of Fishery Product</b>	Obtained from harvesters (primary processor).
<b>Describe the Food</b>	Live oysters, referred to as shellstock in this plan
<b>Method of Receiving, Storage and Distribution</b>	Oysters are received from harvesters live , during non-Vibrio control months, in the shell directly from the boat. The containers of shellstock are then refrigerated at 45°F/7.2°C within two (2) hours of receipt by ABC Oyster Company.
<b>Finished Packaging Type</b>	Shellstock, in containers such as bags, boxes or bulk containers
<b>Intended Use and Consumer</b>	Shellstock is a raw ready-to-eat product that could be eaten raw or cooked by the general public.

### Description of Process

**Receive oyster shellstock** – Oyster shellstock is received live directly from the harvest vessel and all containers are tagged. Harvest tags are checked for harvester permit number, harvest area to determine if it is an approved area, product identification and quantity, and the date and time of harvest.

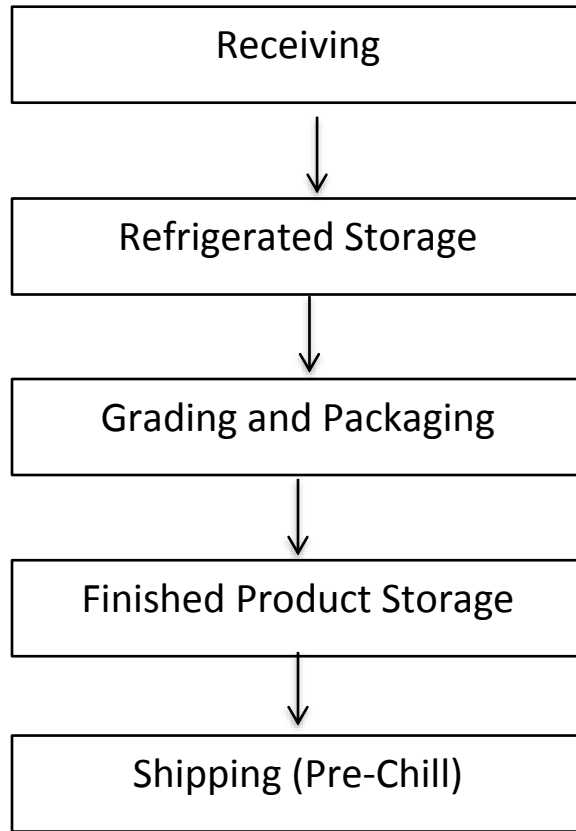
**Shellstock refrigerated storage** – Containers of shellstock are then immediately placed into refrigerated storage at 45°F/7.2°C until needed for processing.

**Grading and Packaging** – Shellstock containers are divided up to meet orders. Dealer information is added to the tags on containers.

**Finished product refrigerated storage** – Containers of shellstock are then immediately placed into refrigerated storage at 45°F/7.2°C until shipped.

**Shipping** - Shellstock is shipped in refrigerated trucks, pre-chilled to 45°F/7.2°C or less.

# Oyster Shellstock Process Flow Chart



## Commercial Processing Example: *Oyster Shellstock*

**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 <b>Company: ABC Oyster Company</b>																						
Fish or Shellfish Species	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
<b>Common Name:</b> Oysters <b>Market Name:</b> Oysters <b>Scientific Name:</b> <i>Crassostrea spp.</i>	√							√								√		√	√		√	

\*ROP = Reduced Oxygen Packaging; \*RTE = Ready-to Eat

**Potential Food Safety Hazards:** The following list of potential food safety hazards were based on the product description and processing flow diagram associated with the oyster shellstock. The hazards are ‘potential hazards’ based on recommendations in the FDA *Hazards and Controls Guidance* (2011 edition) from Tables 3-3 (species-related hazards) and 3-4 (process-related hazards). Since publication of the bound version of the FDA Guidance, progressive updates have been posted on the respective FDA Seafood HACCP websites. Other hazards not covered by the guidance may be relevant to certain products under certain circumstances. Critical control points are established in the National Shellfish Sanitation Program (NSSP) Model Ordinance (searched Aug 2016) and are referenced in the HACCP plan form of this document.

The FDA recommendations indicate 7 potential hazards that are species or process related. Each potential hazard must be addressed in the Hazard Analysis. NOTE: Three of the potential hazards were not included in the full hazard analysis because this processing operation does not include any special pathogen reduction methods to retain raw product characteristics, and there is no glass or metal exposure in the entire process.

1. Pathogens from the Harvest Area (species-related, chapter 4)
2. Natural Toxins (species-related, chapter 6)
3. Environmental Chemicals (species-related, chapter 11)
4. Pathogenic Bacteria Growth, Temperature Abuse (process-related, chapter 12)

**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 Oyster Company</i>	Product Description: <i>Oyster Shellstock, Live, in shell</i>
Firm Location <i>Anywhere USA</i>	Method of Storage & Distribution: <i>Stored and distributed under refrigeration in tagged containers</i>
	Intended Use & Consumer: <b><i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i></b>

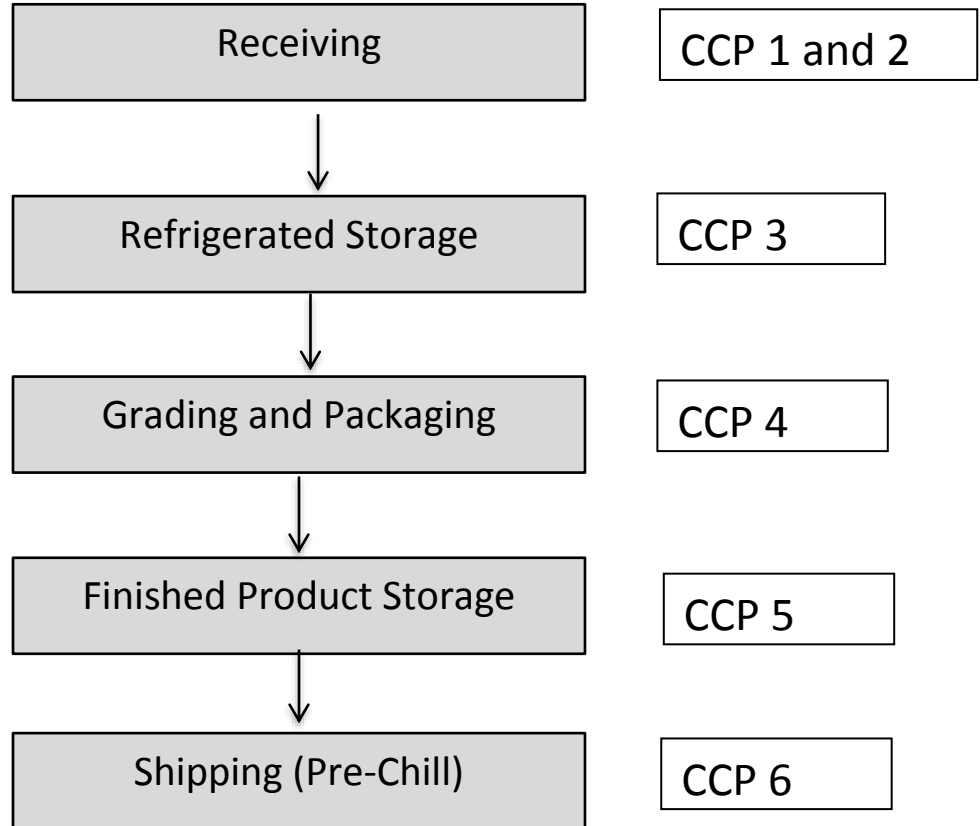
(1) Processing Step	(2) List all potential food safety hazards that could be associated with this product and process.	(3) Is the potential food safety hazard significant (introduced, enhanced or eliminated) at this step? (Yes or No)	(4) Justify the decision that you made in column 3	(5) What control measure(s) can be applied to prevent this significant hazard?	(6) Is this step a Critical Control Point? (Yes or No)
<b>Receive oyster shellstock</b>	Pathogens from the Harvest Area	Yes	Oysters are filter feeders and are likely to accumulate biological contaminants from the growing area	Only receive shellstock harvested from approved waters and properly tagged by a licensed harvester	Yes
	Natural Toxins	Yes	Oysters are filter feeders and are likely to accumulate toxins from the growing area	Only receive shellstock harvested from approved waters and properly tagged by a licensed harvester	Yes
	Environmental Chemicals	Yes	Oysters are filter feeders and are likely to accumulate chemical contaminants from the growing area	Only receive shellstock harvested from approved waters and properly tagged by a licensed harvester	Yes
	Pathogenic bacteria growth – temperature abuse	Yes	Levels of pathogens are likely to increase if temperature abused on the harvest vessel	Control time from harvest to appropriate cooling	Yes
<b>Shellstock refrigerated storage</b>	Pathogens from the Harvest Area	No	Already controlled at the receiving step		
	Natural Toxins	No	Already controlled at the receiving step		
	Environmental Chemicals	No	Already controlled at the receiving step		
	Pathogenic bacteria growth temperature abuse	Yes	Pathogen growth if temperature abused during refrigerated storage	Maintain storage cooler temperature at or below 45° F/7.2° C	Yes

(1) <b>Processing Step</b>	(2) List all potential <b>food safety hazards</b> that could be associated with this product and process.	(3) Is the potential food safety hazard <b>significant</b> (introduced, enhanced or eliminated) at this step? ( <b>Yes or No</b> )	(4) <b>Justify the decision</b> that you made in column 3	(5) What <b>control measure(s)</b> can be applied to prevent this significant hazard?	(6) Is this step a <b>Critical Control Point?</b> ( <b>Yes or No</b> )
<b>Processing – Grading and Packing</b>	Pathogens from the Harvest Area	No	Already controlled at the receiving step; Additional Dealer tag information controlled at customer receiving		No
	Natural Toxins	No	Already controlled at the receiving step; Additional Dealer tag information controlled at customer receiving		No
	Environmental Chemicals	No	Already controlled at the receiving step; Additional Dealer tag information controlled at customer receiving		No
	Pathogenic bacteria growth – temperature abuse	Yes	Levels of pathogens are likely to increase if temperature abused	Processing exposure time less than 2 hours	Yes
<b>Finished product storage</b>	Pathogens from the Harvest Area	No	Already controlled at the receiving step		
	Natural Toxins	No	Already controlled at the receiving step		
	Environmental Chemicals	No	Already controlled at the receiving step		
	Pathogenic bacteria growth – temperature abuse	Yes	Levels of pathogens are likely to increase if temperature abused	Maintain storage cooler temperature at or below 45° F/7.2° C	Yes
<b>Shipping</b>	Pathogenic bacteria growth – temperature abuse	Yes	Levels of pathogens are likely to increase if temperature abused	Previously refrigerated shellstock loaded on pre-chilled trucks pre-chilled to or below 45°F/7.2°C	Yes

# Oyster Shellstock

## Process Flow Chart

(Shaded steps indicate critical control points)



## HACCP PLAN FORM

<b>Firm Name:</b> <i>ABC Oyster Company</i>	<b>Finished Product Description:</b> <i>Oyster Shellstock</i>
<b>Firm Address:</b> <i>Anywhere, USA</i>	<b>Method of Storage &amp; Distribution:</b> <i>Stored and distributed under refrigeration in tagged containers</i>
	<b>Intended Use:</b> <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i>

<b>Critical Control Point (CCP)</b>	<b>CCP 1: RECEIVE SHELLSTOCK</b>								
<b>Significant Hazard</b>	Pathogens, Natural Toxins and/or Chemical Contaminants from the harvest areas								
<b>Critical Limits</b>	<ol style="list-style-type: none"> <li>1. Shellfish must be harvested from approved or conditionally approved waters in the open status (NSSP Model Ordinance Chapter XI. .01 A. (1)(a))</li> <li>2. All bags / containers must have a tag that identifies the date and place of harvest, harvester license number, type, and quantity of shellfish (NSSP Model Ordinance Chapter XI. .01 A. (1)(b))</li> <li>3. Harvester must have a valid license (NSSP Model Ordinance Chapter XI. .01 A.)</li> </ol>								
<b>Monitoring</b>	<table border="0" style="width: 100%;"> <tr> <td style="width: 10%; padding: 5px;"><b>What</b></td> <td style="padding: 5px;"> <ol style="list-style-type: none"> <li>1. Harvest location and status</li> <li>2. Harvester tag information</li> <li>3. Harvester license</li> </ol> </td> </tr> <tr> <td style="padding: 5px;"><b>How</b></td> <td style="padding: 5px;"> <ol style="list-style-type: none"> <li>1. Check tag information for approved waters from state shellfish control agency.</li> <li>2. Visual check</li> <li>3. Visual check</li> </ol> </td> </tr> <tr> <td style="padding: 5px;"><b>When</b></td> <td style="padding: 5px;"> <ol style="list-style-type: none"> <li>1. Every bag or container</li> <li>2. Every bag or container</li> <li>3. Every delivery</li> </ol> </td> </tr> <tr> <td style="padding: 5px;"><b>Who</b></td> <td style="padding: 5px;">Receiving Manager</td> </tr> </table>	<b>What</b>	<ol style="list-style-type: none"> <li>1. Harvest location and status</li> <li>2. Harvester tag information</li> <li>3. Harvester license</li> </ol>	<b>How</b>	<ol style="list-style-type: none"> <li>1. Check tag information for approved waters from state shellfish control agency.</li> <li>2. Visual check</li> <li>3. Visual check</li> </ol>	<b>When</b>	<ol style="list-style-type: none"> <li>1. Every bag or container</li> <li>2. Every bag or container</li> <li>3. Every delivery</li> </ol>	<b>Who</b>	Receiving Manager
	<b>What</b>	<ol style="list-style-type: none"> <li>1. Harvest location and status</li> <li>2. Harvester tag information</li> <li>3. Harvester license</li> </ol>							
	<b>How</b>	<ol style="list-style-type: none"> <li>1. Check tag information for approved waters from state shellfish control agency.</li> <li>2. Visual check</li> <li>3. Visual check</li> </ol>							
	<b>When</b>	<ol style="list-style-type: none"> <li>1. Every bag or container</li> <li>2. Every bag or container</li> <li>3. Every delivery</li> </ol>							
<b>Who</b>	Receiving Manager								
<b>Corrective Action</b>	<p><b>IF</b> critical limits violated; <b>THEN</b>, Reject oysters that do not meet all Critical Limit <b>AND</b></p> <p><b>To regain control</b>, contact harvester to discuss expectations not being met. If problems continue, then discontinue use of harvesters that are not licensed or do not provide proper tags until license is renewed or tags are corrected.</p>								
<b>Verifications</b>	<p>Weekly review of monitoring and corrective action records</p> <p>Weekly check for updates on shellfish harvest water closures or re-openings</p> <p>Annual check that harvest license has been renewed for approved suppliers and check of license status prior to receipt from new suppliers</p> <p>Review verification records within reasonable time</p> <p>Reassess HACCP plan yearly</p>								
<b>Records</b>	Shellfish Receiving Log, corrective action records, verification records; training records								

<b>Signature:</b>	<b>Date:</b>
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## HACCP PLAN FORM

<b>Firm Name:</b> <i>ABC Oyster Company</i>	<b>Finished Product Description:</b> <i>Oyster Shellstock</i>
<b>Firm Address:</b> <i>Anywhere, USA</i>	<b>Method of Storage &amp; Distribution:</b> <i>Stored and distributed under refrigeration in tagged containers</i>
	<b>Intended Use &amp; Consumer:</b> <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i>

<b>Critical Control Point (CCP)</b>	<b>CCP 2: RECEIVE SHELLSTOCK</b>								
<b>Significant Hazard</b>	Pathogenic bacteria growth – temperature abuse								
<b>Critical Limits</b>	<p>CL1: Time from harvest initiation to receipt by dealer must meet time to temperature requirements established by the relevant state shellfish control authority based on non-Vibrio control months, based on the Average Monthly Maximum Air Temperature (AMMAT) matrix in the Model Ordinance Chapter VIII @02 A.</p> <p>CL2: No more than 2 hours from time of receipt from the boat at loading dock to temperature control (NSSP Model Ordinance Chapter XIII. .01 A. (1)(c))</p>								
<b>Monitoring</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; padding: 5px;"><b>What</b></td> <td style="padding: 5px;">Time harvest began Time of receipt Time until temperature control</td> </tr> <tr> <td style="padding: 5px;"><b>How</b></td> <td style="padding: 5px;">Visual check of tag and clock</td> </tr> <tr> <td style="padding: 5px;"><b>When</b></td> <td style="padding: 5px;">Every delivery, every container</td> </tr> <tr> <td style="padding: 5px;"><b>Who</b></td> <td style="padding: 5px;">Receiving Manager</td> </tr> </table>	<b>What</b>	Time harvest began Time of receipt Time until temperature control	<b>How</b>	Visual check of tag and clock	<b>When</b>	Every delivery, every container	<b>Who</b>	Receiving Manager
<b>What</b>	Time harvest began Time of receipt Time until temperature control								
<b>How</b>	Visual check of tag and clock								
<b>When</b>	Every delivery, every container								
<b>Who</b>	Receiving Manager								
<b>Corrective Action</b>	<p><b>CL1: IF product does not meet time limit, THEN reject product AND speak to harvester about expectations not being met; discontinue use of harvester until harvest practices have changed.</b></p> <p><b>CL2: If product does not meet time limit THEN destroy product AND reevaluate employee training and/or handling process at receipt</b></p>								
<b>Verifications</b>	<p>Weekly review of monitoring and corrective action records</p> <p>Review verification records within reasonable time</p> <p>State requirements for shellstock time to receipt controls for non-Vibrio months</p> <p>Reassess HACCP plan yearly</p>								
<b>Records</b>	Shellfish Receiving Log, corrective action records, Verification records; Training Records								

<b>Signature:</b>	<b>Date:</b>
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## HACCP PLAN FORM

Firm Name: <i>ABC Oyster Company</i>	Finished Product Description: <i>Oyster Shellstock</i>
Firm Address: <i>Anywhere, USA</i>	Method of Storage & Distribution: <i>Stored and distributed under refrigeration in tagged containers</i>
	Intended Use & Consumer: <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i>

<b>Critical Control Point (CCP)</b>	<b>CCP 3: SHELLSTOCK REFRIGERATED COOLER STORAGE</b>
<b>Significant Hazard</b>	Pathogenic bacteria growth – temperature abuse
<b>Critical Limits</b>	Cooler temperature less than or equal to 45°/7.2°C (NSSP Model Ordinance Chapter XIII. .01 B. (2))
<b>Monitoring</b>	<b>What</b> Cooler temperature
	<b>How</b> Continuous temperature recording device
	<b>When</b> Continuous monitoring by device with visual check once per day
	<b>Who</b> Cooler Manager
<b>Corrective Action</b>	<p><b>IF</b> cooler temperature exceeds 45°F/7.2°C, <b>THEN</b> check internal temperature of shellstock (edible meats) from throughout cooler. <b>IF</b> oyster meats are 50°F/10°C or less, <b>THEN</b> move product to another cooler or ice properly; <b>AND</b> adjust or repair cooler as necessary.</p> <p><b>IF</b> internal temperature of shellstock meats are above 50°F (10°C) then destroy product.</p>
<b>Verifications</b>	<p>Weekly review of monitoring and corrective action records</p> <p>Check accuracy of temperature recorder and thermometer prior to use and daily; Calibrate cooler as directed by manufacturer; calibrate thermometer weekly.</p> <p>Review verification records within reasonable time</p> <p>Reassess HACCP plan yearly</p>
<b>Records</b>	<p>Temperature Recording Chart /Daily Cooler Log</p> <p>Thermometer accuracy check and calibration log (verification records)</p> <p>Corrective action records; Training Records</p>

<b>Signature:</b>	<b>Date:</b>
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## HACCP PLAN FORM

<b>Firm Name:</b> <i>ABC Oyster Company</i>	<b>Finished Product Description:</b> <i>Oyster Shellstock</i>
<b>Firm Address:</b> <i>Anywhere, USA</i>	<b>Method of Storage &amp; Distribution:</b> <i>Stored and distributed under refrigeration in tagged containers</i>
	<b>Intended Use &amp; Consumer:</b> <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i>

<b>Critical Control Point (CCP)</b>	<b>CCP 4: PROCESSING – Grading and Packaging</b>
<b>Significant Hazard</b>	Pathogenic bacteria growth – temperature abuse
<b>Critical Limits</b>	No more than 2 hours out of temperature control (45°F/7.2°C). (NSSP Model Ordinance Chapter XIII. .01 B. (2)(c.))
<b>Monitoring</b>	<b>What</b> Time out of temperature (refrigeration) control
	<b>How</b> Visual check of time
	<b>When</b> Each lot during processing day
	<b>Who</b> Processing Manager
<b>Corrective Action</b>	<p><b>IF</b> the CL for time is not met; <b>THEN</b> evaluate product safety by determining cumulative exposure temperature and time above 45°F/7.2°C:</p> <p><b>IF</b> shellstock internal temperature is 50°F/10°C or less, then move product to cooler <b>OR</b> ice.</p> <p><b>IF</b> internal temperature of shellstock meats are above 50°F (10°C) <b>THEN</b> destroy product <b>AND</b> retrain and reevaluate processing schedule.</p>
<b>Verifications</b>	<p>Weekly review of monitoring and corrective action records</p> <p>Review verification records within reasonable time</p> <p>Check accuracy of thermometer daily and calibrate weekly</p>
<b>Records</b>	<p>Time log, corrective action log, accuracy and calibration logs;</p> <p>Training records</p>

<b>Signature:</b>	<b>Date:</b>
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## HACCP PLAN FORM

<b>Firm Name:</b> <i>ABC Oyster Company</i>	<b>Finished Product Description:</b> <i>Oyster Shellstock</i>
<b>Firm Address:</b> <i>Anywhere, USA</i>	<b>Method of Storage &amp; Distribution:</b> <i>Stored and distributed under refrigeration in tagged containers</i>
	<b>Intended Use &amp; Consumer:</b> <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i>

<b>Critical Control Point (CCP)</b>	<b>CCP 5: FINISHED PRODUCT STORAGE (same as CCP #3)</b>
<b>Significant Hazard</b>	Pathogen growth – temperature abuse
<b>Critical Limits</b>	Containers of oyster shellstock are maintained in cooler at or below 45°F/7.2°C or less
<b>Monitoring</b>	<b>What</b> Cooler temperature
	<b>How</b> Continuous temperature recording device
	<b>When</b> Continuous monitoring by device with visual check once per day
	<b>Who</b> Cooler Manager
<b>Corrective Action</b>	<p><b>IF</b> cooler temperature exceeds 45°F/7.2°C, <b>THEN</b> check meat temperatures from throughout cooler. <b>IF</b> oyster internal temperature is 50°F/10°C or less, <b>THEN</b> move product to another cooler or ice properly <b>AND</b> adjust or repair cooler as necessary.</p> <p><b>IF</b> internal temperature of shellstock meats are above 50°F (10°C) <b>THEN</b> destroy product.</p>
<b>Verifications</b>	<p>Weekly review of monitoring and corrective action records</p> <p>Check accuracy of temperature recorder and thermometer prior to use and daily; Calibrate as directed by manufacturer.</p> <p>Review verification records within reasonable time</p> <p>Reassess HACCP plan yearly</p>
<b>Records</b>	<p>Temperature Recording Chart or Daily Cooler Log</p> <p>Thermometer accuracy check and calibration log (verification records)</p> <p>Corrective action records; Training Records</p>

<b>Signature:</b>	<b>Date:</b>
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## HACCP PLAN FORM

<b>Firm Name:</b> <i>ABC Oyster Company</i>	<b>Finished Product Description:</b> <i>Oyster Shellstock</i>
<b>Firm Address:</b> <i>Anywhere, USA</i>	<b>Method of Storage &amp; Distribution:</b> <i>Stored and distributed under refrigeration in tagged containers</i>
	<b>Intended Use &amp; Consumer:</b> <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public.</i>

<b>Critical Control Point (CCP)</b>	<b>CCP 6: SHIPPING</b>
<b>Significant Hazard</b>	Pathogenic bacteria growth – temperature abuse
<b>Critical Limits</b>	Ambient temperature of truck must be pre-chilled less than or equal to 45°F (7.2°C) prior to loading refrigerated shellstock (NSSP Model Ordinance Chapter XIII. .01 D.) <i>NOTE: Transit temperature is a CCP monitored at customer receiving</i>
<b>Monitoring</b>	<b>What</b> Truck temperature pre-chilled and maintained at or below 45°F (7.2°C) during transit
	<b>How</b> Visual check of truck temperature
	<b>When</b> Every shipment
	<b>Who</b> Shipping Manager
<b>Corrective Action</b>	<b>IF</b> truck temperature not pre-chilled and maintained at 45° F (7.2°C) or less, check and correct temperature deviation <b>AND</b> fix cooling unit
<b>Verifications</b>	Accuracy check weekly/calibration of truck thermometer per manufacturer’s directions Weekly review of monitoring and corrective action records Review verification records within reasonable time Reassess HACCP plan yearly
<b>Records</b>	Truck cooling log, Accuracy/calibration log; Training Records

<b>Signature:</b>	<b>Date:</b>
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## HACCP Plan Form (*landscape format*)

<b>Firm Name</b> <p style="text-align: center;"><i>ABC Oyster Company</i></p>	<b>Product Description:</b> <i>Oyster Shellstock</i>
<b>Firm Location</b> <p style="text-align: center;"><i>Anywhere USA</i></p>	<b>Method of Storage &amp; Distribution</b> <i>Stored and distributed under refrigeration in tagged containers</i>
	<b>Intended Use &amp; Consumer</b> <i>Shellstock oysters are a raw ready-to-eat product that could be eaten raw or partially cooked by the general public</i>

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
<b>Receive shellstock</b>	Pathogens, Natural Toxins and/or Chemical Contaminants from the harvest areas	1. Shellfish must be harvested from approved or conditionally approved waters in the open status (NSSP Model Ordinance Chapter XI. .01 A. (1)(a))  2. All bags / containers must have a tag that identifies the date and place of harvest, harvester license number, type, and quantity of shellfish (NSSP Model Ordinance Chapter XI. .01 A. (1)(b))  3. Harvester must have a valid license (NSSP Model Ordinance Chapter XI. .01 A.)	1. Harvest location and status  2. Harvester tag information  3. Harvester license	1. Check tag information for approved waters from state shellfish control agency.  2. Visual check  3. Visual check	1. Every bag or container  2. Every bag or container  3. Every delivery	Receiving manager	<b>IF</b> critical limits violated; <b>THEN</b> , Reject oysters that do not meet all Critical Limit <b>AND</b>  to regain control, contact harvester to discuss expectations not being met. If problems continue, then discontinue use of harvesters that are not licensed or do not provide proper tags until license is renewed or tags are corrected.	Weekly review of monitoring and corrective action records  Weekly check for updates on shellfish harvest water closures or re-openings  Annual check that harvest license has been renewed for approved suppliers and check of license status prior to receipt from new suppliers  Review verification records within reasonable time  Reassess HACCP plan yearly	Shellfish Receiving Log, corrective action records, verification records; training records

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
<b>Receive shellstock</b>	Pathogenic bacteria growth – temperature abuse	Time from harvest initiation to receipt by dealer must meet time to temperature requirements established by the relevant state shellfish control authority based on non-Vibrio control months, based on the Average Monthly Maximum Air Temperature (AMMAT) matrix in the Model Ordinance Chapter VIII @02 A. (NSSP Model Ordinance Chapter XIII. .01 A. (1)(c))	Time harvest began  Time of receipt	Visual check of tag and clock	Every delivery, every container	Receiving Manager	<b>IF</b> product does not meet time limit, <b>THEN</b> reject product <b>AND</b> speak to harvester about expectations not being met; discontinue use of harvester until harvest practices have changed.	Weekly review of monitoring and corrective action records  Review verification records within reasonable time  State requirements for shellstock time to receipt controls for non-Vibrio months  Reassess HACCP plan yearly	Shellfish Receiving Log, corrective action records, Verification records; Training Records
<b>Refrigerated Cooler Storage</b>	Pathogenic bacteria growth – temperature abuse	Cooler temperature less than or equal to 45°/7.2°C (NSSP Model Ordinance Chapter XIII. .01 B. (2))	Cooler temperature	Continuous temperature recording device	Continuous monitoring by device with visual check once per day	Cooler manager	<b>IF</b> cooler temperature exceeds 45°F/7.2°C, <b>THEN</b> check internal temperature of shellstock (edible meats) from throughout cooler. <b>IF</b> oyster meats are 50°F/10°C or less, <b>THEN</b> move product to another cooler or ice properly <b>AND</b> adjust or repair cooler as necessary.  <b>IF</b> oyster meats are above 50°F/10°C, destroy product.	Weekly review of monitoring and corrective action records  Check accuracy of temperature recorder and thermometer prior to use and daily; Calibrate cooler as directed by manufacturer; calibrate thermometer weekly.	Temperature Recording Chart /Daily Cooler Log  Thermometer accuracy check and calibration log (verification records)  Corrective action records; Training Records

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
								Review verification records within reasonable time Reassess HACCP plan yearly	
<b>Grading and Packaging</b>	Pathogenic bacteria growth – temperature abuse	No more than 2 hours out of temperature control (45°F/7.2°C). (NSSP Model Ordinance Chapter XIII. .01 B. (2)(c.))	Timer out of temperature (refrigeration) control	Visual check of time	Each lot during processing days	Processing manager	<p><b>IF</b> the CL for time is not met; <b>THEN</b> evaluate product safety by determining cumulative exposure temperature and time above 45°F/7.2°C:</p> <p><b>IF</b> shellstock internal temperature is 50°F/10°C or less, then move product to cooler OR ice.</p> <p><b>IF</b> shellstock internal temperature is above 50°F/10°C, destroy product.</p> <p><b>AND</b> retrain and reevaluate processing schedule</p>	<p>Weekly review of monitoring and corrective action records</p> <p>Review verification records within reasonable time</p> <p>Check accuracy of thermometer daily and calibrate weekly</p>	<p>Time log, corrective action log, accuracy and calibration logs;</p> <p>Training records</p>
<b>Finished Product Storage</b>	Pathogen growth – temperature abuse	Containers of oyster shellstock are maintained in cooler at or below 45°F/7.2°C or less	Cooler temperature	Continuous temperature recording device	Continuous monitoring by device with visual check once per day	Cooler Manager	<p><b>IF</b> cooler temperature exceeds 45°F/7.2°C. <b>THEN</b> evaluate product safety by determining cumulative exposure temperature and time above 45°F/7.2°C <b>AND</b> adjust or repair cooler as necessary.</p> <p><b>IF</b> cooler temperature exceeds 45°F/7.2°C, <b>THEN</b> check meat temperatures from throughout cooler. <b>IF</b></p>	<p>Weekly review of monitoring and corrective action records</p> <p>Check accuracy of temperature recorder and thermometer prior to use and daily; Calibrate as directed by manufacturer.</p>	<p>Temperature Recording Chart or Daily Cooler Log</p> <p>Thermometer accuracy check and calibration log (verification records)</p> <p>Corrective action records; Training Records</p>

Critical Control Point (CCP)	Significant Hazard(s)	Critical Limits for each Control Measure	Monitoring				Corrective Action	Verification	Records
			What	How	When	Who			
							oyster internal temperature is > 50°F/10°C, <b>THEN</b> destroy product.	Review verification records within reasonable time  Reassess HACCP plan yearly	
<b>Shipping (pre-chill)</b>	Pathogenic bacteria growth – temperature abuse	Ambient temperature of truck must be pre-chilled less than or equal to 45° F (7.2° C) prior to loading refrigerated shellstock (NSSP Model Ordinance Chapter XIII. .01 D.)  <i>NOTE: Transit temperature is a CCP monitored at customer receiving</i>	Truck temperature pre-chilled and maintained at or below 45°F (7.2°C) during transit	Visual check of truck temperature	Every shipment	Shipping Managers	<b>IF</b> truck temperature not pre-chilled and maintained at 45° F (7.2° C) or less, check and correct temperature deviation <b>AND</b> fix cooling unit	Accuracy check weekly/calibration of truck thermometer per manufacturer's directions  Weekly review of monitoring and corrective action records  Review verification records within reasonable time  Reassess HACCP plan yearly	Truck cooling log, Accuracy/calibration log; Training Records

<b>Signature:</b>	<b>Date:</b>
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