07/26/21 **PUC # 21-122**

Process Authority Letter Positive Beverage LLC

This letter is written in request from for process recommendations for the product listed below that are planned to be produced. Positive Beverage provided formulas for each and preparation procedures. Formula provided to Process Authority will accompany this letter.

Product	Formula Number	Formula Date
Positive Beverage - Sparkling Prickly Pear Lemonade	PBHS087	not given

Can	12 oz. Sleek
Batch Pre-Pasteurization pH	< 3.95
Process Lethality - Pasteurization Temperature & Time	**see page 2**
Package Lethality - Liquid to Cap Temperature & Time	**see page 2**
Cooling Tunnel Maximum Discharge Temperature	< 100 *F

Ingredient Integrity Confirmation:	Incoming COAs on ingredients will be confirmed by QC to comply with written manufacturing standards (Product Specification Sheets) prior to usage.
pH in beverage	If batch pH is not less than 3.95 prior to pasteurization, pH is to be lowered by adding Citric acid such that final product is < 3.95 pH, and within formula range of 3.30 to 3.94.
Closure Integrity Confirmation:	Closure integrity will be tested at least (1x/hr.) and confirmed to comply with closure supplier recommendations on file in QC records. This data is part of mandatory QC records. If there are any microbiological issues due either to the can or lid defects, or improper application; there is no assurance of sterility.
Pasteurization Temperature Confirmation:	Pasteurization temperature and run time will be confirmed by chart recorder & available to QC to confirm and approve processing with specifications of Process Authority letter.
Maximum Unpasteurized Batch Temperature:	The maximum temperature for the unpasteurized batch to be held prior to pasteurization & commencement of bottling is 80*F.
Maximum Unpasteurized Batch Holding Time:	The maximum holding time for the batch to be held prior to pasteurization & commencement of bottling is (8) hours.
Commercial Sterility	By following the processing parameters of this Process Authority letter; the produced beverage should be commercially sterile (pathogen free). It is acknowledged that there are heat tolerant, spore forming bacteria (i.e. Alicyclobacillus spp.) and spore forming molds (i.e. B. Fulva) that exist. This problem has occurred when using sub-standard ingredients and/or not following Current Good Manufacturing Practices.(21 CFR 117)
Ingredients & Ingredient Suppliers:	This Process Authority letter is based on specific weight/weight % formula, specific ingredients from specific ingredient suppliers. As such, no changes in ingredients or ingredient suppliers is permitted without first notifying Process Authority of desired change and providing documentation that is approved by Process Authority. This is done as ingredients from different sources may vary in microbiological limits and/or pH and negatively impact the processing requirements. Attachment: **Formulas Full Spectrum 4 SKU Production.pdf**
FDA Classification	This product is classified as a "Formulated Acid Food", and does NOT require S Number filing with state of California and nor Federal "2541e" filing.
Specific To Copacker Plant	This Process Authority letter is specific to Full Spectrum Bottling, Lake Elsinore, CA. as other plants will not have the same equipment nor operating parameters.
Carbonation Volumes	Carbonation Volumes are 2.4 to 2.7 in final can

continued on page 2

"Product Lethality" Minimum Temperature & Time *

Temperature *F	Process Time to achieve F16/200 value 0.1 (seconds)
191	21.9
190	25.3
189	29.2
188	33.7
187	39.0
186	45.0
185	52.0
184	60.0
183	69.3
182	80.0
181	92.4

Reference *F 200*F
Z Value *F 16*F
A Lethality-min 0.10

Meeting any combination of temperature and time will be legal. Minimum temperature at minimum time.

** Reference Breidt article, 2010, Food Protection Trends, Vol. 30, pp. 268-272, Use of Linear Models for Thermal Processing of Acidified Foods"*

Beverage is to be HTST according to parameters above, flash cooled, carbonated and cold filled into cans.

Package Lethality - Can & Lid Sterilization

Cans	Sterilized with Ozonated Water and/or Sterile Ionized Air and confirmed by ATP testing
Lids	Sterilized with UV light and confirmed by ATP testing.
Packaging Line & Equipment	Sterilized and confirmed by ATP swabs with results identified by locatio
Filler	A minimum of 4 filler valves will be confirmed passing ATP testing before usage.

Note: Package Lethality records of equal importance to Product Lethality Pasteurization requirement.

This process is sufficient to produce a shelf stable product if using good quality ingredients and following Current Good Manufacturing Practices (21CFR117). This process assumes that incoming ingredients are sound and of good microbiological quality, with product complying with supporting documentation (COA) when received and approved by company QC prior to usage.

Submitted by:
Mark Caporale, Process Authority
PAL # 21-122 Sparkling Prickly Pear Lemonade
Effective Date: 07/26/21
Supersedes Date: n.a.

07/26/21 **PUC # 21-121**

Process Authority Letter Positive Beverage LLC

This letter is written in request from for process recommendations for the product listed below that are planned to be produced. Positive Beverage provided formulas for each and preparation procedures. Formula provided to Process Authority will accompany this letter.

Product	Formula Number	Formula Date
Positive Beverage - Sparkling Tropical Berry	PBHS085	not given

Can	12 oz. Sleek
Batch Pre-Pasteurization pH	< 3.95
Process Lethality - Pasteurization Temperature & Time	**see page 2**
Package Lethality - Liquid to Cap Temperature & Time	**see page 2**
Cooling Tunnel Maximum Discharge Temperature	< 100 *F

Ingredient Integrity Confirmation:	Incoming COAs on ingredients will be confirmed by QC to comply with written manufacturing standards (Product Specification Sheets) prior to usage.
pH in beverage	If batch pH is not less than 3.95 prior to pasteurization, pH is to be lowered by adding Citric acid such that final product is < 3.95 pH, and within formula range of 3.30 to 3.94.
Closure Integrity Confirmation:	Closure integrity will be tested at least (1x/hr.) and confirmed to comply with closure supplier recommendations on file in QC records. This data is part of mandatory QC records. If there are any microbiological issues due either to the can or lid defects, or improper application; there is no assurance of sterility.
Pasteurization Temperature Confirmation:	Pasteurization temperature and run time will be confirmed by chart recorder & available to QC to confirm and approve processing with specifications of Process Authority letter.
Maximum Unpasteurized Batch Temperature:	The maximum temperature for the unpasteurized batch to be held prior to pasteurization & commencement of bottling is 80*F.
Maximum Unpasteurized Batch Holding Time:	The maximum holding time for the batch to be held prior to pasteurization & commencement of bottling is (8) hours.
Commercial Sterility	By following the processing parameters of this Process Authority letter; the produced beverage should be commercially sterile (pathogen free). It is acknowledged that there are heat tolerant, spore forming bacteria (i.e. Alicyclobacillus spp.) and spore forming molds (i.e. B. Fulva) that exist. This problem has occurred when using sub-standard ingredients and/or not following Current Good Manufacturing Practices.(21 CFR 117)
Ingredients & Ingredient Suppliers:	This Process Authority letter is based on specific weight/weight % formula, specific ingredients from specific ingredient suppliers. As such, no changes in ingredients or ingredient suppliers is permitted without first notifying Process Authority of desired change and providing documentation that is approved by Process Authority. This is done as ingredients from different sources may vary in microbiological limits and/or pH and negatively impact the processing requirements. Attachment: **Formulas Full Spectrum 4 SKU Production.pdf**
FDA Classification	This product is classified as a "Formulated Acid Food", and does NOT require S Number filing with state of California and nor Federal "2541e" filing.
Specific To Copacker Plant	This Process Authority letter is specific to Full Spectrum Bottling, Lake Elsinore, CA. as other plants will not have the same equipment nor operating parameters.
Carbonation Volumes	Carbonation Volumes are 2.4 to 2.7 in final can

continued on page 2

"Product Lethality" Minimum Temperature & Time *

Temperature *F	Process Time to achieve F16/200 value 0.1 (seconds)
191	21.9
190	25.3
189	29.2
188	33.7
187	39.0
186	45.0
185	52.0
184	60.0
183	69.3
182	80.0
181	92.4

Reference *F 200*F
Z Value *F 16*F
A Lethality-min 0.10

Meeting any combination of temperature and time will be legal. Minimum temperature at minimum time.

** Reference Breidt article, 2010, Food Protection Trends, Vol. 30, pp. 268-272, Use of Linear Models for Thermal Processing of Acidified Foods"*

Beverage is to be HTST according to parameters above, flash cooled, carbonated and cold filled into cans.

Package Lethality - Can & Lid Sterilization

Cans	Sterilized with Ozonated Water and/or Sterile Ionized Air and confirmed by ATP testing
Lids	Sterilized with UV light and confirmed by ATP testing.
Packaging Line & Equipment	Sterilized and confirmed by ATP swabs with results identified by locatior
Filler	A minimum of 4 filler valves will be confirmed passing ATP testing before usage.

Note: Package Lethality records of equal importance to Product Lethality Pasteurization requirement.

This process is sufficient to produce a shelf stable product if using good quality ingredients and following Current Good Manufacturing Practices (21CFR117). This process assumes that incoming ingredients are sound and of good microbiological quality, with product complying with supporting documentation (COA) when received and approved by company QC prior to usage.

Submitted by:
Mark Caporale, Process Authority
PAL # 21-121 Sparkling Tropical Berry
Effective Date: 07/26/21
Supersedes Date: n.a.

07/26/21 **PUC # 21-120**

Process Authority Letter Positive Beverage LLC

This letter is written in request from for process recommendations for the product listed below that are planned to be produced. Positive Beverage provided formulas for each and preparation procedures. Formula provided to Process Authority will accompany this letter.

Product	Formula Number	Formula Date
Positive Beverage - Sparkling Orange	PBHS084	not given

Can	12 oz. Sleek
Batch Pre-Pasteurization pH	< 3.91
Process Lethality - Pasteurization Temperature & Time	**see page 2**
Package Lethality - Liquid to Cap Temperature & Time	**see page 2**
Cooling Tunnel Maximum Discharge Temperature	< 100 *F

Ingredient Integrity Confirmation:	Incoming COAs on ingredients will be confirmed by QC to comply with written manufacturing standards (Product Specification Sheets) prior to usage.
pH in beverage	If batch pH is not less than 3.91 prior to pasteurization, pH is to be lowered by adding Citric acid such that final product is < 3.91 pH, and within formula range of 3.30 to 3.90.
Closure Integrity Confirmation:	Closure integrity will be tested at least (1x/hr.) and confirmed to comply with closure supplier recommendations on file in QC records. This data is part of mandatory QC records. If there are any microbiological issues due either to the can or lid defects, or improper application; there is no assurance of sterility.
Pasteurization Temperature Confirmation:	Pasteurization temperature and run time will be confirmed by chart recorder & available to QC to confirm and approve processing with specifications of Process Authority letter.
Maximum Unpasteurized Batch Temperature:	The maximum temperature for the unpasteurized batch to be held prior to pasteurization & commencement of bottling is 80*F.
Maximum Unpasteurized Batch Holding Time:	The maximum holding time for the batch to be held prior to pasteurization & commencement of bottling is (8) hours.
Commercial Sterility	By following the processing parameters of this Process Authority letter; the produced beverage should be commercially sterile (pathogen free). It is acknowledged that there are heat tolerant, spore forming bacteria (i.e. Alicyclobacillus spp.) and spore forming molds (i.e. B. Fulva) that exist. This problem has occurred when using sub-standard ingredients and/or not following Current Good Manufacturing Practices.(21 CFR 117)
Ingredients & Ingredient Suppliers:	This Process Authority letter is based on specific weight/weight % formula, specific ingredients from specific ingredient suppliers. As such, no changes in ingredients or ingredient suppliers is permitted without first notifying Process Authority of desired change and providing documentation that is approved by Process Authority. This is done as ingredients from different sources may vary in microbiological limits and/or pH and negatively impact the processing requirements. Attachment: **Formulas Full Spectrum 4 SKU Production.pdf**
FDA Classification	This product is classified as a "Formulated Acid Food", and does NOT require S Number filing with state of California and nor Federal "2541e" filing.
Specific To Copacker Plant	This Process Authority letter is specific to Full Spectrum Bottling, Lake Elsinore, CA. as other plants will not have the same equipment nor operating parameters.
Carbonation Volumes	Carbonation Volumes are 2.4 to 2.7 in final can

continued on page 2

"Product Lethality" Minimum Temperature & Time *

Temperature *F	Process Time to achieve F16/200 value 0.1 (seconds)
191	21.9
190	25.3
189	29.2
188	33.7
187	39.0
186	45.0
185	52.0
184	60.0
183	69.3
182	80.0
181	92.4

Reference *F 200*F
Z Value *F 16*F
A Lethality-min 0.10

Meeting any combination of temperature and time will be legal. Minimum temperature at minimum time.

** Reference Breidt article, 2010, Food Protection Trends, Vol. 30, pp. 268-272, Use of Linear Models for Thermal Processing of Acidified Foods"*

Beverage is to be HTST according to parameters above, flash cooled, carbonated and cold filled into cans.

Package Lethality - Can & Lid Sterilization

Cans	Sterilized with Ozonated Water and/or Sterile Ionized Air and confirmed by ATP testing
Lids	Sterilized with UV light and confirmed by ATP testing.
Packaging Line & Equipment	Sterilized and confirmed by ATP swabs with results identified by locatio
Filler	A minimum of 4 filler valves will be confirmed passing ATP testing before usage.

Note: Package Lethality records of equal importance to Product Lethality Pasteurization requirement.

This process is sufficient to produce a shelf stable product if using good quality ingredients and following Current Good Manufacturing Practices (21CFR117). This process assumes that incoming ingredients are sound and of good microbiological quality, with product complying with supporting documentation (COA) when received and approved by company QC prior to usage.

Submitted by:
Mark Caporale, Process Authority
PAL # 21-120 Sparkling Orange
Effective Date: 07/26/21
Supersedes Date: n.a.

07/26/21 **PUC # 21-119**

Process Authority Letter Positive Beverage LLC

This letter is written in request from for process recommendations for the product listed below that are planned to be produced. Positive Beverage provided formulas for each and preparation procedures. Formula provided to Process Authority will accompany this letter.

Product	Formula Number	Formula Date
Positive Beverage - Sparkling Perfectly Peach	PBHS083	not given

Can	12 oz. Sleek
Batch Pre-Pasteurization pH	< 3.87
Process Lethality - Pasteurization Temperature & Time	**see page 2**
Package Lethality - Liquid to Cap Temperature & Time	**see page 2**
Cooling Tunnel Maximum Discharge Temperature	< 100 *F

Ingredient Integrity Confirmation:	Incoming COAs on ingredients will be confirmed by QC to comply with written manufacturing standards (Product Specification Sheets) prior to usage.
pH in beverage	If batch pH is not less than 3.87 prior to pasteurization, pH is to be lowered by adding Citric acid such that final product is < 3.87 pH, and within formula range of 3.26 to 3.86.
Closure Integrity Confirmation:	Closure integrity will be tested at least (1x/hr.) and confirmed to comply with closure supplier recommendations on file in QC records. This data is part of mandatory QC records. If there are any microbiological issues due either to the can or lid defects, or improper application; there is no assurance of sterility.
Pasteurization Temperature Confirmation:	Pasteurization temperature and run time will be confirmed by chart recorder & available to QC to confirm and approve processing with specifications of Process Authority letter.
Maximum Unpasteurized Batch Temperature:	The maximum temperature for the unpasteurized batch to be held prior to pasteurization & commencement of bottling is 80*F.
Maximum Unpasteurized Batch Holding Time:	The maximum holding time for the batch to be held prior to pasteurization & commencement of bottling is (8) hours.
Commercial Sterility	By following the processing parameters of this Process Authority letter; the produced beverage should be commercially sterile (pathogen free). It is acknowledged that there are heat tolerant, spore forming bacteria (i.e. Alicyclobacillus spp.) and spore forming molds (i.e. B. Fulva) that exist. This problem has occurred when using sub-standard ingredients and/or not following Current Good Manufacturing Practices.(21 CFR 117)
Ingredients & Ingredient Suppliers:	This Process Authority letter is based on specific weight/weight % formula, specific ingredients from specific ingredient suppliers. As such, no changes in ingredients or ingredient suppliers is permitted without first notifying Process Authority of desired change and providing documentation that is approved by Process Authority. This is done as ingredients from different sources may vary in microbiological limits and/or pH and negatively impact the processing requirements. Attachment: **Formulas Full Spectrum 4 SKU Production.pdf**
FDA Classification	This product is classified as a "Formulated Acid Food", and does NOT require S Number filing with state of California and nor Federal "2541e" filing.
Specific To Copacker Plant	This Process Authority letter is specific to Full Spectrum Bottling, Lake Elsinore, CA. as other plants will not have the same equipment nor operating parameters.
Carbonation Volumes	Carbonation Volumes are 2.4 to 2.7 in final can

continued on page 2

"Product Lethality" Minimum Temperature & Time *

Temperature *F	Process Time to achieve F16/200 value 0.1 (seconds)
191	21.9
190	25.3
189	29.2
188	33.7
187	39.0
186	45.0
185	52.0
184	60.0
183	69.3
182	80.0
181	92.4

Reference *F 200*F
Z Value *F 16*F
A Lethality-min 0.10

Meeting any combination of temperature and time will be legal. Minimum temperature at minimum time.

** Reference Breidt article, 2010, Food Protection Trends, Vol. 30, pp. 268-272, Use of Linear Models for Thermal Processing of Acidified Foods"*

Beverage is to be HTST according to parameters above, flash cooled, carbonated and cold filled into cans.

Package Lethality - Can & Lid Sterilization

Cans	Sterilized with Ozonated Water and/or Sterile Ionized Air and confirmed by ATP testing
Lids	Sterilized with UV light and confirmed by ATP testing.
Packaging Line & Equipment	Sterilized and confirmed by ATP swabs with results identified by locatio
Filler	A minimum of 4 filler valves will be confirmed passing ATP testing before usage.

Note: Package Lethality records of equal importance to Product Lethality Pasteurization requirement.

This process is sufficient to produce a shelf stable product if using good quality ingredients and following Current Good Manufacturing Practices (21CFR117). This process assumes that incoming ingredients are sound and of good microbiological quality, with product complying with supporting documentation (COA) when received and approved by company QC prior to usage.

Submitted by:
Mark Caporale, Process Authority
PAL # 21-119 Sparkling Perfectly Peach
Effective Date: 07/26/21
Supersedes Date: n.a.