



Environmental Health Division
Permitting Services Office
1001 N. Central Ave. # 300
Phoenix, AZ 85004-1937
Phone: 602-506-6980
Fax: 602-506-6862
esplanreview@mail.maricopa.gov
esd.maricopa.gov

Guidelines for Safe Juicing Bottling Operations

Public Health and Consumer Expectations

It is the shared responsibility of customers, permitted establishments and the [Maricopa County Environmental Services Department](#) (Department) that all unpasteurized juice bottling and requirements are sufficient to ensure that the consumer is safe and to prevent disease outbreak, or the transmission of communicable disease. This shared responsibility extends to ensuring that consumer expectations are met and that establishments are safe, clean, and honestly represented to the public and citizens of Maricopa County.

The Department's Mission Statement: *Providing safe food, water, waste disposal, and vector borne disease reduction controls to the people of Maricopa County so that they may enjoy living in a health and safe community.*

The Department's Vision Statement: *As the recognized regional environmental leader, we will develop and foster innovative environmental protection programs for the safety of our residents and their environment.*

Advantage of Uniform Standards and Fairness with Customers

The goal of the Department is to protect public health by assuring safety and advancing public health by assisting our customers with uniform criteria and guidelines they may require related to safe juice bottling operations, methods, and requirements. The provisions of codes and guidelines adopted by the Department provide a system of prevention and safeguards, and minimum requirements for permitted establishments; and promote fair dealing with our customers.

The advantages of uniform standards, codes, and guidelines have long been recognized by industry and Department officials. Industry conformance with acceptable guidelines and practices is what is necessary to protect public health, and why it is important for compliance to be accepted. Standards and codes provide a guide for establishments and what is required to operate in a safe and efficient manner. They are useful to industry in that they provide acceptable standards that can be applied in business. In addition, they are helpful to local governmental bodies such as the Department in developing, implementing, or revising their own codes and guidelines.

The guidance document provides for the general requirements for safe juice bottling operations and fair dealing that can be uniformly applied to permitted establishments within Maricopa County. This guideline is the cumulative result of efforts and recommendations of many contributing individuals, agencies, codes, HACCP principles, juicing methods, guidelines, and organizations with years of experience in assessing minimum requirements for the safe operation of permitted establishments.

Establishments inspected by this Department demonstrate compliance with adopted performance standards, codes, and guidelines by ensuring that their facilities adhere to minimum criteria, adequately designed and constructed facilities, procedures, methods, and implement active managerial control.

This official guideline is utilized by the Department for compliance with regulatory requirements, ensuring fairness to customers, and increasing public health protection. It is intended to ensure the clear, concise, and fair minimum standards for permitted establishments and to convey useful criteria to our customers and permit holders.

Purpose

The [Maricopa County Environmental Health Code \(MCEHC\)](#) establishes regulations to ensure the delivery of safe food and drink. These include regulations for approved food sources, safe food handling and storage, as well as clean and sanitary food contact surfaces. The scope of the food

service establishment will determine the appropriate regulatory jurisdiction. Food service establishments serving fresh squeezed juice that are operating under Maricopa County's jurisdiction are subject to MCEHC regulations. The purpose of this document is to provide guidance how to conduct safe retail juice bottling operations within Maricopa County.

Juice bottling operations that wholesale their juice to other businesses, distribute interstate, or make any type of health claim would then be regulated by the [United States Food & Drug Administration \(FDA\)](#), and not the Department. Juice bottling operations that process fresh juice for sale directly to their customers are considered retail food operations and would be regulated by the Department, not by the FDA. Such juice may be sold in bottles or by the glass in restaurants, juice bars, farmer's markets, or other approved permitted locations. The juice processor is required to maintain direct retail span of control during all retail sales, including home delivery and off-site retail sale locations.

Hazards associated with juicing include surface contaminants that can be carried into the juice and survive or grow in the juice. The Department encourages juice bottlers to operate consistently within FDA guidelines by using approved pasteurization methods or other effective 5-log pathogen reduction treatments for consumer safety.

For all wholesale juicing operations, the FDA requires fresh juice to be pasteurized or go through an approved HACCP-based 5-log pathogen reduction process. Examples of approved, non-pasteurization 5-log reduction methods include ultraviolet irradiation, pulsed-light, or citrus fruit surface-sanitation treatments. If produce is citrus fruit, then this can be done on the fruit surface with proper procedures. But, for other fruits and vegetables, this needs to be a true thermal destruction, i.e., pasteurization.

At this time, regulations allow retail juice bottling operations to produce unpasteurized juice without a HACCP plan. However, unpasteurized juice bottled by retail juicing operations is required to meet strict labeling requirements as specified by the Food Code, which includes a consumer advisory. Since bottled juices may contain multiple types of juice, unpasteurized juice sold in approved bottles must be maintained cold at 41°F or less with a 7-calendar day expiration date for consumer safety.

If at any time a retail unpasteurized juice bottling operation sells its juice to other businesses, distributes its juice interstate, or makes any type of health claim, then the Department permit will be closed and the operation will be required to register with FDA. The operation then would be required to follow all FDA requirements as a juice processor including pasteurization or equivalent 5-log reduction method, and follow the FDA Juice HACCP rules. Failure to follow Maricopa County Code requirements and the requirements specified in this guideline may result in legal action and/or subsequent direct jurisdictional regulation by the FDA.

To consistently operate as a retail juice operation and remain under the jurisdiction of the Department, all unpasteurized bottled juice is required to be sold by the owner or employee of the permitted juicing business. In addition, the facility is required to offer direct retail sale of its bottled products at the location of production to remain under the jurisdiction of the Department. Maintaining 100% retail span of control is essential to the permitting of a retail juice bottling operation.

Please be advised that even when all prudent precautions are taken, there exists distinct and potentially serious health hazards associated with bottling unpasteurized juice. Therefore, the Department strongly recommends that all bottled juice be pasteurized due to the inherent risks and documented illness outbreaks associated with unpasteurized juice.

❖ Maricopa County Environmental Health Department Requirements

Retail juicing operations in Maricopa County may be required to submit plans to the Department for review and meet the following regulation, requirements, and restrictions; as such, it is advisable to contact the Department prior to beginning a juice operation:

Juice

For the purposes of this guideline and HACCP principles, “Juice” means the aqueous liquid expressed or extracted from one or more fruits or vegetables, purees of the edible portions of one or more fruits or vegetables, or any concentrates of such liquid or puree that have not been specifically processed or treated to prevent, reduce, or eliminate the presence of pathogens as stated in Code of Federal Regulations (CFR), Title 21, Part 101.17(g) [CFR Title 21-Juice](#).

Plan Review and Permitting

All establishments are evaluated on a case-by-case basis after a comprehensive review of measured and observed methods, criteria, equipment, and facilities in order to determine proper permitting. The Department does not recommend that juice production take place in an area where there is a potential for cross-contamination.

All juice production areas shall meet current codes and requirements in order to obtain an operational permit(s) to operate. One or more of the following operational permit(s) may be required in order to legally conduct retail sales of juice; Eating and Drinking Permit, Food Production Permit, Retail Food Permit, and/or Mobile Food Permits. Please refer to Permits Issued section located at the end of this guideline.

HACCP Plan

A Hazard-Analysis-Critical-Control-Points (HACCP) Plan is not required if the juice bottling operation is conducted with a retail establishment and the unpasteurized juice is sold only at the retail establishment. However, the Department does recommend that an informal plan be submitted to the Department on how the juicing production methods will occur and be sold as FDA and Maricopa County jurisdiction will need to be verified.

Active Managerial Control

The Food Code requires active managerial control in permitted establishments. The common goal of operators and regulators of retail and food service establishments is to produce safe, quality food and beverage products for consumers.

To effectively reduce the occurrence of foodborne illness risk factors, operators of retail and food service establishments must focus their efforts on achieving active managerial control.

The term “active managerial control” is used to describe industry’s responsibility for developing and implementing food safety management systems to prevent, eliminate, or reduce the occurrence of foodborne illness risk factors.

Active managerial control means the purposeful incorporation of specific actions or procedure by industry management into the operation of their business to attain control over foodborne illness risk factors. It embodies a preventive rather than reactive approach to food safety through a continuous system of monitoring and verification.

Active managerial control through the use of HACCP principles is achieved by identifying the food safety hazards attributed to products, determining the necessary steps that will control the identified hazards, and implementing on-going practices or procedures that will ensure safe food and beverages.

Maricopa County Environmental Health Code Chapter VII requires that all permitted food establishment locations shall have at least one (1) current certified food service manager on staff,

who is either physically present or available by electronic or telephonic means whenever the food establishment is in operation.

Juicing Locations

All juicing operations and sales shall be conducted in approved permitted commercial facilities such as restaurants, juice bars, farmer's markets, retail kiosks, or other approved permitted locations deemed acceptable by the Department. The juice processor shall maintain direct retail span of control during all retail sales, including home delivery and off-site retail sale locations.

Approved Commercial Facility

1. Juicing and juice bottling shall occur in an approved permitted commercial facility.
2. Facilities shall meet all current Department design, construction, plumbing and operational requirements, including a separate NSF-approved food preparation sink to rinse produce.
3. Sufficient storage shall be provided for equipment, utensils, produce, and finished juice products.
4. Sufficient refrigeration shall be provided for cut produce and finished juice products.
5. Prepared produce shall be stored in approved containers and finished juice product shall be stored under refrigeration at 41°F or less.
6. No production shall take place outside of the permitted facility (i.e., at farmer's markets or special events).
7. Juice bottling shall not take place from mobile food establishments.
8. The juicing facility shall maintain records for produce, raw ingredients, produce deliveries, juice production records, and juice sales.
9. It is recommended that the facility implement a food safety plan and Standard Operating Procedures (SOPs) for its operations, including a sick employee policy.
10. The facility shall have a current certified food service manager.

Product Source

1. Produce and ingredients shall be from an approved source that complies with law, approved distributor, or retail grocery establishment.
2. Incoming produce shall be inspected and all damaged and unwholesome produce shall be not be used for production. Remember the quality of the fruit is the quality of the juice.
3. Fruit that has fallen on the ground or floor shall not be used.
4. Washed or clean produce shall not be placed into a box that is used to handle or transport unclean produce.

Produce Washing/Rinsing

1. All produce shall be washed in accordance with the FDA Food Code and United States Department of Agriculture (USDA) requirements.
 - a. Any produce with blemishes or damage shall be discarded
 - b. Dirt, stems, and leaves shall be removed. This may require multiple washes for heavily soiled produce such as fresh carrots, beets, ginger, spinach, leeks, etc.
 - c. All root produce shall undergo a physical rinse and scrub under running water.
 - d. Solid flesh fruits and vegetables shall be scrubbed with an approved produce brush.
 - e. Produce shall be rinsed very well under clean cold running water to remove soil and debris in a properly plumbed NSF approved commercial grade preparation sink(s).
 - f. The utilization of produce washes is not a valid replacement for physical scrubbing and rinsing.

- g. Use of a surface sanitizer of a bleach solution on non-porous produce, followed by a thorough rinse is recommended. For additional information on this process, please visit <http://umaine.edu/publications/4336e>.
2. Remember, clean good-quality produce is the first key step in preparing a safe and wholesome juice. Use of un-cleaned and unacceptable produce cannot be corrected after juicing without pasteurization or other aggressive treatments.
3. Recommendations – Provide additional produce wash/preparation sinks for large volume juice production due to the increased wash/rinse needs of the operation. During the planning phase, additional space and plumbing requirements should be taken into consideration.

Product Preparation

1. All sinks, produce preparation and cutting surfaces, and utensils shall be sanitized prior to use.
2. Produce shall not be juiced on counters where un-cleaned produce was stored or placed upon, unless surfaces have been thoroughly washed, rinsed and sanitized before processing.
3. Prepared/cut produce shall be stored in approved food-grade containers.
4. All ingredients and juice menu items shall be from an approved source.
5. Certain produce items are not recommended for juicing such as sprouts, wheat grass, carrots, garlic, and oils due to increased risks associated with these raw ingredients in unpasteurized bottled juice products.

Refrigeration and pH

All processed produce and juice products shall be stored under refrigeration at 41°F or less in NSF-approved commercial grade cooler units.

Adequate approved refrigeration is a great step in maintaining juice quality, and a very useful tool for product safety. However, it cannot be relied upon as a sole preventative measure for product safety. If contaminants are introduced during juicing, bottling, holding, or transportation processes, then refrigeration will not remove the hazard, even when low pH is taken into consideration. If the produce is not clean going into the juice, including proper employee hygiene practices, proper hand washing methods, proper glove usage, juicing equipment and food contact surfaces maintained clean and sanitary, then nothing short of pasteurization or a 5-log treatment will ensure a safe juice product for the consumer. Based on available data, acidifying to a pH below 4.2 may render the product as non-TCS (Time/Temperature Control for Food Safety) by the FDA Food Code, but may not remove the hazards.

Juicing Equipment

Method of juicing and equipment, including all types of centrifugal juice extractors, cold-press juicers, masticating juicers, upright masticating juicers, single gear juicers, single auger juicers, twin gear (tritulating) juicers, wheat grass juicers, citrus juicers/extractors/presses, and similar juicing equipment shall meet the following:

1. The juicing device and other equipment shall be commercial grade, NSF approved, ANSI equivalent, or deemed acceptable by the Department. All equipment shall meet current Department standards and requirements. All juicers, juice presses, juicing equipment, and custom equipment shall be evaluated on-site and approved only on a case-by-case basis.
2. Utensils, knives, cutting boards, containers, press plates, press bags, strainer bags, funnels, and similar articles shall meet current Department requirements.
3. All food contact equipment shall be easily cleanable and stored under sanitary conditions to prevent contamination.
4. Approved juice bags and strainers bags have been found to be difficult to maintain clean and sanitary. Thorough washing of the bags, including approved rinsing and sanitizing steps in an approved properly plumbed commercial grade NSF 3-compartment sinks shall be

conducted per Health Code. Multiple replacement bags are recommended to be kept on-site.

5. It is recommended that the approved use and installation of commercial washing machines and warewashing units should be considered in order to facilitate cleaning and sanitizing.

Juicing Equipment Sanitization

1. Use of thoroughly cleaned and sanitized equipment is the second key step in fresh juice safety. If you juice good, wholesome produce on soiled equipment, the dirt and debris from the equipment can contaminate the juice, thereby making it potentially unwholesome and unsafe.
2. Juicing Equipment – Shall be cleaned and sanitized using approved methods defined in the Maricopa County Environmental Health Code.
3. All equipment and food contact surfaces shall be maintained clean to both sight and touch.
4. The freezing of properly cleaned and sanitized food grade press bags or strainers between production cycles in commercial grade NSF freezers is strongly recommended to “arrest” any pathogens that may be present on the bags.
5. Any equipment, press bags, and strainer bags that are in disrepair/worn shall be repaired or replaced, as needed.

Labeling

On July 8, 2001 the FDA announced a final rule designed to improve the safety of fruit and vegetable juice and juice products. Under the rule, juice processors must use HACCP principles for juice processing. Retail establishments where packaged juice is made and only sold directly to consumers are not required to comply with this regulation.

However, the labeling regulations require a warning statement on fruit and vegetable products that have not been processed to prevent, reduce, or eliminate pathogenic microorganisms that may be present. The FDA expects that providing this information to consumers will allow them to make informed decisions on whether to purchase and consume such juice products, thereby reducing the incidence of foodborne illnesses and deaths caused by the consumption of these juices.

Juice bottles shall be prominently displayed and shall meet the following labeling requirements:

1. Meet all Federal labeling requirement as specified in [CFR Title 21-Labeling](#), unless otherwise currently exempt.
2. As specified under FDA 3-401.11 - Treating Juice, juice packaged in an establishment shall be properly labeled, if not treated to yield a 5-log reduction or the most resistant microorganism of public health significance.
3. As specified in 21 CFR 101.17(g) - Food Labeling, warning notice, and safe handling statements - JUICES that have not been specifically processed to prevent, reduce, or eliminate the presence of pathogens shall have the following consumer advisory stating that the juice is not pasteurized, “**WARNING:** This product has not been pasteurized and, therefore, may contain harmful bacteria that can cause serious illness in children, the elderly, and persons, with weakened immune systems.”
 - a. The Consumer Advisory statement shall not be paraphrased or changed. It must be printed exactly as stated.
4. In addition, the bottled juice shall be labeled:
 - a. Consume by date or expiration date. A production date is also recommended to be placed on the product.

Notice: Juice shall have an expiration date of 7-calendar days. The day the juice is produced is considered the first day. Therefore, the date of production is considered the first day plus 6-calendar days to indicate the 7-calendar day expiration date. The Department recommends an expiration date of 3-calendar days.

- b. The shelflife must be preceded by a statement that the juice must be “Use or Discarded by.”

- c. Statements such as “Enjoy by” or “Best by” are considered quality statements
- 5. The following are also recommended to be placed on the label:
 - a.. “Must keep refrigerated.”
 - b. “This juice is intended for immediate consumption.”

Fresh juice products that are sold in an open glass directly to the consumer are exempt and from the labeling requirements.

Approved Juice Bottles & Caps

1. Approved, food grade plastic bottles that do not require cleaning before filling provided by the manufacturer/supplier shall be utilized.
2. Clean bottles shall be stored in original enclosed cartons or containers within a sealed plastic bag in an approved location. Consider how many bottles per container to help ensure sanitary conditions for storage of unused plastic bottles.
3. Yeast and mold grow well under acidic conditions, but require air (oxygen) to grow. When oxygen is removed, the contaminate bacteria and spores may grow, since the competing microorganisms are reduced. Therefore, sealed mason, screw or bail type glass jars are considered reduced oxygen packaging (ROP), and shall not be utilized, unless a variance has been first been obtained by the Department. This would also extend to those containers with an inner pressure sensitive seal/liner or heat induction seal/liner, which also prevent air transference and create a reduced oxygen environment.
4. Sterile plastic bottles may be sealed with approved tamper evident continuous thread cap, ratchet cap, snap-on cap, or similar safety cap/lid. Also, the plastic lids can be secured with tamper evident shrink band or seal.
5. Re-usable plastic and glass containers shall not be used.
6. A “hands-free” pressure capping device is recommended. Glove usage is required.

Production & Bottling

1. All working surfaces shall be sanitized.
2. Bare hand contact is prohibited.
3. Practice proper hand washing and glove usage. Approved gloves shall be utilized during the entire juicing process. Gloves shall be used for the peeling, slicing, cutting, and processing of produce, preparation, juicing process, and during the capping and bottling of bottled juice products.
4. It is highly recommended to have a written sick employee policy.
5. Approved juice product items shall be bottled per Department regulations.
6. Approved juice bottles shall be sealed with;
 - a. An approved tamper evident continuous thread cap, ratchet cap, snap-on cap, similar safety cap/lid; or
 - b. An approved safety cap/lid with;
 - c. Approved inner pressure sensitive seal/liner or heat induction seal/liner;
 - d. Sealed with tamper evident shrink band or seal.
7. Juice bottles shall meet the following labeling requirements:
 - a. Name of product, net quantity statement, nutrition facts, ingredients, major food allergy information, and manufacturer name/address.
 - b. The juice label shall include the following:
 - 1) A warning label, “**WARNING:** This product has not been pasteurized, and therefore, may contain harmful bacteria that can cause serious illness in children, the elderly, and persons, with weakened immune systems.”
 - 2) Consume by Date or Expiration Date
 - i. Both the production date and the 7-day expiration date are recommended to be included on the package
 - c. The following are also recommended to be included on the label:
 - 1) “This juice is intended for immediate consumption.”

- 2) "Must keep refrigerated".
8. Bottled juice shall be stored at 41°F or less in approved NSF commercial grade coolers.

Juice Sales & Delivery

1. Bottled juice shall be transported at 41°F or less in approved commercial refrigeration unit or insulated commercial grade containers capable of maintaining temperature at 41°F or less.
2. Approved insulated containers shall be transported in approved vehicles for immediate delivery to customers or other retail locations. An issued Food Peddler permit is required for immediate retail sales delivery to customers at farmer's markets or special events.
3. Bottled juice shall be delivered to individuals for immediate consumption, for direct sales at farmer's markets, or other locations approved by the Department.

Permits Issued

1. An Eating & Drinking Permit or Food Production permit is required to bottle unpasteurized juice for direct to consumer retail sales.
2. A Retail Permit may be required if the establishment intends to conduct sales at an off-site retail space location. Span of control shall be maintained by the juice processor during retail sales.
3. A Food Peddler permit is required to sell pre-bottled juice products at a farmer's market or special event.

Additional Safeguards - Prohibited Service and Prohibited Sale

Food establishments that serve a highly susceptible population (e.g. child/adult day care centers, assisted living facilities, hospitals, nursing homes, senior centers, etc.) shall not serve prepackaged juice or a prepackaged beverage juice, that bears the warning label and they must serve only pasteurized juice.

"Highly susceptible population" means persons who are more likely than other people in the general population to experience foodborne disease because they are:

1. Immunocompromised; preschool age children, or older adults; and
2. Obtaining food at a facility that provides services such as custodial care, health care, or assisted living, such as a child or adult day care center, kidney dialysis center, hospital or nursing home, or nutritional or socialization services such as a senior center.
3. For juice only, the population includes children who are age 9 or less and receive food in a school, day care setting, or similar facility that provides custodial care.