

CHAPTER 453D – ADULT USE OF MARIJUANA

Requirements for the Production of Marijuana Products

Sec. () “Potentially hazardous marijuana products and ingredients” (NRS 453D.())

1. *“Potentially hazardous marijuana products and ingredients” means an edible item that is natural or synthetic and that requires temperature control because it is in a form capable of supporting:*
 - (a) *The rapid and progressive growth of infectious or toxigenic microorganisms;*
 - (b) *The growth and toxin production of Clostridium botulinum; or*
 - (c) *In raw shell eggs, the growth of Salmonella Enteritidis.*
2. *The term “potentially hazardous marijuana products and ingredients” includes, without limitation:*
 - (a) *An animal item that is raw or heat-treated;*
 - (b) *An item of plant origin that is heat-treated or consists of raw seed sprouts;*
 - (c) *Cut melons and tomatoes;*
 - (d) *Garlic-in-oil mixtures that are not modified in a way that result in mixtures which prohibit growth; and*
 - (e) *Whipped butter*
3. *The term “potentially hazardous marijuana products and ingredients” does not include:*
 - (a) *An ingredient with a value of water activity of 0.85 or less;*
 - (b) *An ingredient with a pH level of 4.6 or below when measured at 75°F (24°C); or*

(c) An ingredient, in a hermetically sealed and unopened container, that is commercially processed to achieve and maintain commercial sterility under conditions of non-refrigerated storage and distribution.

Sec. () Person in charge: Demonstration of knowledge. (NRS 453D.())

Based on the risks inherent to the operation of a marijuana product manufacturing facility, the persons responsible for managing each such facility shall demonstrate to the Department knowledge of disease prevention, and the requirements of this chapter and chapter 453D of NRS by:

- 1. Complying with the provisions of this chapter and chapter 453D of NRS and having no violations of a critical nature during inspection;*
- 2. As defined in NRS 446.050, the marijuana product manufacturing facility or retail marijuana store shall ensure that at least one employee maintains such certification as a food protection manager;*
- 3. Responding correctly to the questions of an inspector of marijuana establishments regarding:
 - (a) The relationship between the prevention of disease and the personal hygiene of a marijuana establishment agent engaged in the extraction of concentrated marijuana or production of edible marijuana products or marijuana-infused products.*
 - (b) The prevention of the transmission of disease by a marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products that has a disease or condition that may transmit disease.*
 - (c) The symptoms associated with the diseases that are transmissible through marijuana products and ingredients.**

- (d) *The significance of the relationship between maintaining the temperature for a certain amount of time for potentially hazardous marijuana products and ingredients and the prevention of illness transmission.*
- (e) *The hazards involved in the consumption of raw or undercooked meat, poultry and eggs.*
- (f) *The required temperatures and times for safe cooking of potentially hazardous marijuana products and ingredients, including, without limitation, meat, poultry and eggs.*
- (g) *The required temperatures and times for the safe refrigerated storage, hot holding, cooling and reheating of potentially hazardous marijuana products and ingredients.*
- (h) *The relationship between the prevention of illness transmission and the management and control of:*
 - (1) *Cross contamination;*
 - (2) *Hand contact with finished marijuana products and ingredients;*
 - (3) *Hand washing; and*
 - (4) *Maintaining the establishment in a clean condition and in good repair.*
- (i) *The correct procedures for cleaning and sanitizing utensils and the surfaces of equipment that have direct contact with marijuana products and ingredients.*
- (j) *The identification of poisonous or toxic materials in the facility and the procedures necessary to ensure that those materials are safely stored, dispensed, used and disposed of according to applicable state and federal laws and regulations.*

Sec. () Hand washing required of marijuana establishment agents. (NRS 453D.())

Each marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products shall keep his or her hands and the exposed portions of his or her arms clean in the manner set forth in NRS 453D.

Sec. () Hand washing: Procedure. (NRS 453D.())

1. *Each marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products shall, when required pursuant to NAC 453D.(), clean his or her hands and the exposed portions of his or her arms for at least 20 seconds, using a cleaning compound in a handwashing sink that is appropriately equipped.*
2. *Each marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products shall use the following cleaning procedure in the order stated to clean his or her hands and the exposed portions of his or her arms, including, without limitation, surrogate prosthetic devices for hands and arms:*
 - (a) *Rinse under clean, running warm water.*
 - (b) *Apply an amount of cleaning compound recommended by the manufacturer of the cleaning compound.*
 - (c) *Rub together vigorously for at least 15 seconds while:*
 - (1) *Paying particular attention to removing soil from underneath the fingernails during the cleaning procedure; and*
 - (2) *Creating friction on the surfaces of the hands and arms, fingertips and areas between the fingers.*
 - (d) *Thoroughly rinse under clean, running warm water.*

(e) *Immediately follow the cleaning procedure with thorough drying using a clean paper towel.*

Sec. () Hand washing: When required. (NRS 453D.())

Each marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products shall clean his or her hands and exposed portions of his or her arms in the manner set forth in NAC 453D.()::

1. *Immediately upon entrance to the product area;*
2. *Immediately before engaging in preparation for the extraction of concentrated marijuana or production of edible marijuana products or marijuana-infused products, including, without limitation, working with exposed marijuana products, clean equipment and utensils and unwrapped single-service and single-use articles;*
3. *After touching bare human body parts other than clean hands and exposed portions of arms, including, without limitation, surrogate prosthetic devices for hands and arms;*
4. *After using the toilet room;*
5. *After coughing, sneezing, using a handkerchief or disposable tissue, using tobacco, eating or drinking;*
6. *After handling soiled equipment or utensils;*
7. *During preparation for the extraction of concentrated marijuana or production of edible marijuana products or marijuana-infused products, as often as necessary to remove soil and contamination and to prevent cross-contamination when changing tasks;*
8. *When switching between working with un-processed marijuana products or un-cooked food products and working with finished concentrated marijuana, edible marijuana products or marijuana-infused products;*

9. *Before donning gloves for working with marijuana products; and*
10. *After engaging in other activities that contaminate the hands.*

Sec. () Methods for handling marijuana products. (NRS 453D.())

1. *A marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products shall not have contact with exposed, finished marijuana products with his or her bare hands and shall use suitable utensils, including, without limitation, deli tissue, spatulas, tongs, single-use gloves or dispensing equipment when handling exposed, finished concentrated marijuana, edible marijuana products or marijuana-infused products.*
2. *A marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products shall minimize bare hand and arm contact with exposed marijuana products that are not in a finished form.*

Sec. () Non-marijuana ingredients: Approved sources. (NRS 453D.())

1. *Each marijuana product manufacturing facility shall ensure that it obtains non-marijuana ingredients for marijuana products from sources that comply with the requirements of federal and state law and regulations and are approved by the Department, including, without limitation, commercial and retail businesses.*
2. *A marijuana product manufacturing facility shall not use or prepare non-marijuana ingredients prepared or stored in a private home.*

Sec. () Methods for preventing contamination. (NRS 453D.())

1. *Except as otherwise provided in subsection 2, each marijuana product manufacturing facility shall ensure that marijuana products and ingredients are protected from cross-contamination by:*

- (a) *Separating raw animal ingredients during storage, preparation, holding and display from raw marijuana products, or other raw finished ingredients such as fruits and vegetables, and from concentrated marijuana and cooked or baked and finished edible marijuana products or marijuana-infused products.*
 - (b) *Except when combined as ingredients, separating types of raw animal ingredients from each, including, without limitation, meat, poultry and eggs, during storage, preparation, holding and display by preparing each type of raw animal ingredient at a different time or in a different area and:*
 - (1) *Using separate equipment for each type of raw animal ingredient;*
 - or*
 - (2) *Arranging each type of raw animal ingredient in equipment so that cross contamination of one type of raw animal ingredient with another is prevented.*
 - (c) *Preparing each type of raw animal ingredient at different times or in separate areas.*
2. *The provisions of subsection 1 do not apply to items stored frozen in a freezer.*
 3. *Marijuana products must be protected from contamination by storing the product in a clean, dry location:*
 - (a) *Where the products are not exposed to splashes, dust or other contamination; and*
 - (b) *Fifteen centimeters or more above the floor.*
 4. *Marijuana products and direct contact surfaces of equipment and utensils must be stored and handled in a manner that prevents any biological, chemical or physical contamination at all times.*

5. *Chemical sanitizer must be available for immediate use at the proper concentration during all hours of operation.*

Sec. () Requirements for preparing, cooking and cooling marijuana products. (NRS 453D.())

Each marijuana product manufacturing facility shall ensure that:

1. *Pasteurized eggs or egg products are substituted for raw eggs in the preparation of edible marijuana products or marijuana-infused products.*
2. *Marijuana products and ingredients only have contact with the surfaces of:*
 - (a) *Equipment and utensils that are cleaned and sanitized; or*
 - (b) *Single-service and single-use articles that have not previously been used.*
3. *Ingredients such as eggs, meat, poultry and marijuana containing these raw animal ingredients are cooked to heat all parts of the marijuana product to a temperature and for a time that complies with one of the following methods based on the product that is being cooked:*
 - (a) *At 145°F (63°C) or above for 15 seconds for:*
 - (1) *Raw eggs; and*
 - (2) *Meat, including, without limitation, commercially-raised game animals.*
 - (b) *At 155°F (68°C) or above for 15 seconds for:*
 - (1) *Mechanically tenderized and injected meats; and*
 - (2) *Meat and commercially raised game animals if it is comminuted.*
 - (c) *At 165°F (74°C) or above for 15 seconds for poultry, stuffed meat, stuffed pasta, stuffed poultry or stuffing containing meat or poultry.*

4. *Except during preparation, cooking or cooling, potentially hazardous marijuana products and ingredients shall be maintained:*
 - (a) *At 135°F (57°C) or above; or*
 - (b) *At 41°F (5°C) or less.*

5. *During the thawing process, potentially hazardous marijuana products and ingredients shall:*
 - (a) *Never exceed 41°F (5°C);*
 - (b) *Use one of the four approved methods, including:*
 - (1) *Under refrigeration;*
 - (2) *Under cool running water;*
 - (3) *As part of the cooking process; or*
 - (4) *In a microwave if to be cooked immediately after.*

Sec. () Requirements for date marking. (NRS 453D.())

Each marijuana product manufacturing facility shall ensure that:

1. *Potentially hazardous marijuana products and ingredients prepared and held by the facility for more than 24 hours are clearly marked to indicate the date or day by which the item must be consumed on the premises, sold or discarded when held at a temperature of 41°F (5°C) or less for a maximum of 7 days; and*
2. *Finished potentially hazardous marijuana products and ingredients that are prepared and packaged by a commercial processing plant are clearly marked at the time that the original container is opened and, if the item is held for more than 24 hours, indicate the date or day by which the item must be consumed on the premises, sold or discarded, based on the temperature and time combination set forth in subsection 1. The day on*

which the original container is opened in the marijuana establishment must be counted as “day 1.” The day or date marked by the marijuana product manufacturing facility may not exceed a use-by date of the manufacturer if the manufacturer determined the use-by date.

3. *If the expiration date is perishable, the expiration date must come from the shelf life testing, or must be refrigerated and must not exceed 7 days, including the date of preparation.*

Sec. () Materials used in construction of utensils and contact surfaces of equipment.

(NRS 453D.())

Each marijuana product manufacturing facility shall ensure that the materials that are used in the construction of utensils and the contact surfaces of equipment are certified as food grade for commercial use or otherwise approved by the Department:

1. *Do not allow the migration of deleterious substances or impart colors, odors or tastes to marijuana products; and*
2. *Under normal use conditions are:*
 - (a) *Safe;*
 - (b) *Durable, corrosion-resistant and nonabsorbent;*
 - (c) *Sufficient in weight and thickness to withstand repeated warewashing;*
 - (d) *Finished to have a smooth, easily cleanable surface; and*
 - (e) *Resistant to pitting, chipping, crazing, scratching, scoring, distortion and decomposition.*

Sec. () Sinks; alternative equipment. (NRS 453D.())

1. *Each facility for the production of edible marijuana products or marijuana infused products shall ensure that it provides:*
 - (a) *A sink with at least three compartments for manually washing, rinsing and sanitizing equipment and utensils;*
 - (b) *Sink compartments that are large enough to accommodate immersion of the largest equipment and utensils; and*
 - (c) *Running water that reaches a minimum temperature of 120°F (49°C).*
2. *If equipment or utensils are too large for the warewashing sink, a marijuana product manufacturing facility must use a warewashing machine or alternative equipment.*

Sec. () Ventilation hood systems and devices. (NRS 453D.())

Each marijuana product manufacturing facility shall ensure that its ventilation hood systems and devices are sufficient in number and capacity to prevent grease or condensation from collecting on walls and ceilings.

Sec. () Temperature of hot water sanitizing rinse; chemical sanitizers. (NRS 453D.())

Each facility for the production of edible marijuana products or marijuana infused products shall ensure that:

1. *In a mechanical operation, the temperature of the fresh hot water sanitizing rinse as it enters the manifold is not more than 194°F (90°C) or less than 180°F (82°C).*
2. *A chemical sanitizer used in a sanitizing solution for a manual or mechanical operation at contact times is used in accordance with the manufacturer's label use instructions that are approved by the Environmental Protection Agency, and as follows:*
 - (a) *A chlorine solution must have a concentration between 50 parts per million and 100 parts per million or be otherwise prepared in accordance with the manufacturer's label.*
 - (b) *An iodine solution must have concentration between 12.5 parts per million and 25 parts per million.*
 - (c) *A quaternary ammonium compound solution must:*
 - (1) *Have a concentration of 200 parts per million or be otherwise prepared in accordance with the manufacturer's label; and*
 - (2) *Be used as indicated by the use directions of the manufacturer included on the label.*
3. *If a chemical sanitizer other than chlorine, iodine or a quaternary ammonium compound is used, it is applied in accordance with the manufacturer's label use instructions that are approved by the Environmental Protection Agency.*
4. *A sanitizer bucket or spray bottle must be available during all hours of operation and be kept at the proper concentration.*
5. *Test strips must be appropriate for the type of sanitizer available and used properly.*

Sec. () Surfaces of equipment and utensils: General requirements. (NRS 453D.())

Each marijuana product manufacturing facility shall ensure that:

1. *The surfaces of equipment and utensils that have direct contact with marijuana products are clean to sight and touch;*
2. *The surfaces of cooking equipment and pans that have direct contact with marijuana products are kept free of encrusted grease deposits and other soil accumulations; and*
3. *The surfaces of equipment that do not have direct contact with marijuana products are kept free of an accumulation of dust, dirt, residue and other debris.*

Sec. () Surfaces of equipment and utensils: Cleaning frequency. (NRS 453D.())

Each marijuana product manufacturing facility shall ensure that:

1. *The surfaces of equipment and utensils that have direct contact with marijuana products are cleaned:*
 - (a) *Before each use with a different type of raw animal ingredient, including, without limitation, beef, pork or poultry;*
 - (b) *Each time there is a change from working with raw marijuana products to working with finished marijuana products;*
 - (c) *Between uses with raw fruits and vegetables and with potentially hazardous marijuana products and ingredients, using the appropriate time and temperature controls to ensure the safety of the marijuana products; and*
 - (d) *At any time during operation when contamination may have occurred.*
2. *If they come into contact with potentially hazardous marijuana products and ingredients, surfaces and utensils are cleaned throughout the day at least once every 4 hours.*
3. *The surfaces of utensils and equipment that have direct contact with marijuana products and ingredients that are not potentially hazardous are cleaned:*

- (a) At any time when contamination may have occurred; and*
- (b) In equipment, including, without limitation, ice bins and beverage dispensing nozzles, and enclosed components of equipment, such as ice makers, cooking oil storage tanks and distribution lines, beverage and syrup dispensing lines or tubes, coffee bean grinders and water vending equipment:*

- (1) At a frequency specified by the manufacturer; or*

- (2) If the manufacturer does not specify a frequency, at a frequency necessary to prevent the accumulation of soil or mold.*

Sec. () Surfaces of equipment and utensils: Sanitizing. (NRS 453D.())

Each marijuana product manufacturing facility shall ensure that:

- 1. The surfaces and utensils that have direct contact with marijuana products are adequately sanitized.*
- 2. The utensils and surfaces of equipment that have direct contact with marijuana products are sanitized before use after cleaning.*
- 3. After being cleaned, surfaces of equipment and utensils that have direct contact with marijuana products are sanitized in:*
 - (a) Hot water manual operations by immersion for at least 30 seconds with a temperature of 170°F (77°C) or above;*
 - (b) Hot water mechanical operations by being cycled through equipment that is set up and achieving a utensil surface temperature of 160°F (71°C) as measured by an irreversible registering temperature indicator; or*
 - (c) Chemical manual or mechanical operations, including, without limitation, the application of sanitizing chemicals by immersion, manual swabbing, brushing or*

pressure spraying methods using a solution as specified on the manufacturer's label use instructions that are approved by the Environmental Protection Agency, by providing an exposure time of at least 30 seconds for any chemical sanitizing solutions.

Sec. () Cooking and baking equipment and microwave ovens: Cleaning frequency.

(NRS 453D.())

Each marijuana product manufacturing facility shall ensure that:

- 1. The surfaces of cooking and baking equipment that have direct contact with marijuana products are cleaned at least once every 24 hours; and*
- 2. The cavities and door seals of microwave ovens are cleaned at least once every 24 hours by using the recommended cleaning procedure of the manufacturer.*

Sec. () Light intensity. (NRS 453D.())

Each facility for the production of edible marijuana products or marijuana infused products shall ensure that the light intensity in the facility is:

- 1. At least 20 foot candles (215 lux):*
 - (a) At a distance of 30 inches (75 cm) above the floor in walk-in refrigeration units and areas for storage of dry marijuana products and in other areas and rooms during periods of cleaning;*
 - (b) Inside equipment such as reach-in and under-counter refrigerators; and*
 - (c) At a distance of 30 inches (75 cm) above the floor in areas used for hand washing, warewashing and equipment and utensil storage and in toilet rooms.*
- 2. At least 50 foot candles (540 lux) at a surface where a marijuana establishment agent engaged in the extraction of concentrated marijuana or production of marijuana products*

is working with marijuana products or working with utensils or equipment, including, without limitation, knives, slicers, grinders or saws where employee safety is a factor.

Sec. () Mechanical ventilation. (NRS 453D.()) *Each marijuana product manufacturing facility shall ensure that it provides mechanical ventilation of sufficient capacity as necessary to keep rooms free of excessive heat, steam, condensation, vapors, obnoxious odors, smoke and fumes.*

Sec. () Filters used to manufacture, process or package marijuana products. (NRS 453D.())

- 1. Except as otherwise provided in subsection 2, each marijuana product manufacturing facility shall ensure that filters for liquid filtration used in the extraction of concentrated marijuana or manufacture, processing or packaging of marijuana-infused products intended for human use do not release fibers into such products.*
- 2. A marijuana product manufacturing facility shall not use a fiber-releasing or asbestos-containing filter.*

Sec. () Authorized methods, equipment, solvents, gases and mediums. (NRS 453D.())

- 1. A marijuana product manufacturing facility may only use the methods, equipment, solvents, gases and mediums set forth in this section when creating marijuana extracts.*
- 2. A marijuana product manufacturing facility may use the hydrocarbons N-butane, isobutane, propane, heptane or other solvents or gases exhibiting low to minimal potential human health-related toxicity approved by the Department. These solvents must be of at least 99 percent purity and a marijuana product manufacturing facility must, when using such solvents:*

- (a) Use the solvents in a professional grade, closed-loop extraction system designed to recover the solvents;*
 - (b) Work in a spark-free environment with proper ventilation; and*
 - (c) Follow all applicable local fire, safety and building codes in the processing and storage of the solvents.*
- 3. A marijuana product manufacturing facility may use a professional grade, closed-loop CO₂ gas extraction system where every vessel is rated to a minimum of 900 pounds per square inch and it follows all applicable local fire, safety and building codes in the processing and the storage of the solvents. The CO₂ must be of at least 99 percent purity.*
- 4. A marijuana product manufacturing facility may use heat, screens, presses, steam distillation, ice water and other methods without employing solvents or gases to create kief, hashish, bubble hash, infused dairy butter, or oils or fats derived from natural sources, and other extracts.*
- 5. A marijuana product manufacturing facility may use food grade glycerin, ethanol and propylene glycol solvents to create marijuana extracts.*
- 6. A marijuana product manufacturing facility which creates marijuana extracts must develop standard operating procedures, good manufacturing practices and a training plan before producing marijuana extracts for the marketplace. Any person using solvents or gases in a closed-looped system to create marijuana extracts must be fully trained on how to use the system, have direct access to applicable material safety data sheets and safely handle and store the solvents and gases.*