

**MANUFACTURING MILK LAW OF 2001 (EXCERPT)**  
**Act 267 of 2001**

**288.699 Milk and dairy products; pasteurization required; cooling; equipment; temperature; ingredients added before or after pasteurization; repasteurized condensed milk; design and operation of pasteurization equipment.**

Sec. 139.

(1) Except as provided in section 138, all milk and dairy products shall be pasteurized before entrance of the milk and dairy products into any of the following:

- (a) The evaporator or condensing equipment.
- (b) The cheese-making process.
- (c) The cheese culture making process.
- (d) The frozen dessert mix freezing.
- (e) The cultured product culturing.

(2) All dairy by-products from dairy plants used for feeding purposes for farm animals shall be pasteurized or be derived from pasteurized products when specified by the director.

(3) All milk and dairy products shall be pasteurized at the plant at which they are processed or dried, except for crystalized condensed whey and other high solids/low water activity products such as sweetened condensed milk, which shall be transported in tankers or containers dedicated to transporting pasteurized products. This subsection shall not be construed as banning the transportation in nondedicated tankers of pasteurized milk or dairy products to another processing or drying plant for repasteurization and processing or drying.

(4) All pasteurized milk and dairy products, except those to be cultured and those to receive immediate additional heat treatment in subsequent processes of manufacturing, shall be cooled immediately in approved equipment to temperature criteria specified in section 70 or maintained at or above 145 degrees Fahrenheit (63 degrees Celsius).

(5) All pasteurization equipment shall comply with sanitary standards and shall be tested by the department every 3 months for proper construction and operation.

(6) The airspace temperature in a vat pasteurizer shall be maintained at least 5°F (2.8°C) above the minimum pasteurization temperature for the product being pasteurized during the entire 30-minute vat pasteurization cycle.

(7) All milk and milk products (i.e., milk solids, whey, nonfat dry milk, condensed milk, cream, skim milk, etc.), eggs, egg products, cocoa, cocoa products, emulsifiers, stabilizers, vitamins, and liquid sweeteners shall be added prior to pasteurization. All such additions shall be made in a sanitary manner, which prevents the contamination of the added ingredient or the milk or milk product. Ingredients that may be added after pasteurization are those flavoring ingredients and other ingredients that have been found to be safe and suitable and include:

- (a) Ingredients permitted by the CFR standards of identity when considering a standardized milk or milk product.
- (b) Fresh fruits and vegetables added to cultured milk and milk products provided the resultant equilibrium pH level (4.6 or below when measured at 24°C (75°F)) of the finished product is reached without undue delay and is maintained during the shelf life of the product.
- (c) Ingredients subjected to prior heating or other technology that has been demonstrated to the United States food and drug administration to be sufficient to destroy or remove pathogenic microorganisms.
- (d) Ingredients having a water activity ( $A_w$ ) of 0.85 or less.
- (e) Ingredients having a high acid content (pH level of 4.6 or below when measured at 24°C (75°F)) or high alkalinity (pH level greater than 11 when measured at 24°C (75°F)).
- (f) Roasted nuts.
- (g) Dry sugars and salts.
- (h) Flavor extracts having a high alcohol content.
- (i) Safe and suitable bacterial cultures and enzymes.
- (j) Ingredients that have been found to be safe and suitable by the United States food and drug administration.

(8) All milk and milk products shall be pasteurized, prior to the entrance into RO, UF, evaporator, or condensing equipment, and shall be performed in the milk plant where the processing is done, except that the following apply:

(a) If the product is whey, pasteurization is not required if the product is acid whey (pH less than 4.7) or if it is processed in RO or UF equipment at temperatures at or below 7°C (45°F).

(b) If the product is raw milk for pasteurization, the product may be concentrated by the use of RO or UF membrane filtration without pasteurization, prior to entrance into the equipment, provided that the following sampling, testing, installation, and operational criteria are met:

(i) Prior to processing, all raw milk supplies are sampled and tested for antibiotic residues in accordance with the provisions of this law.

(ii) The RO or UF filtration system is designed and operated to assure that milk or milk product temperature is

maintained at or below 7Â°C (45Â°F) throughout the process, provided that the product temperature may rise above 7Â°C (45Â°F) for a period of not more than 15 minutes, further provided that should the product temperature rise above 10Â°C (50Â°F), the product shall be immediately diverted until the product is again below 7Â°C (45Â°F). Diverted product shall be discarded, immediately cooled to below 7Â°C (45Â°F), or immediately pasteurized.

(iii) The RO or UF system must be equipped with temperature monitoring and recording devices that comply with the applicable specifications outlined in the grade A milk law of 2001. At a minimum, milk or milk product temperature shall be monitored and recorded prior to entering the system, prior to entering each stage of the modules in series that contain cooling, and the retentate stream prior to any final cooler and upon exiting the system.

(iv) If the RO or UF system is not designed, installed, and operated in accordance with the above noted criteria, the raw milk or milk product must be pasteurized prior to entering the RO or UF system.

(9) All condensed milk and milk products transported to a milk plant for drying shall be repasteurized at the milk plant where they are dried.

(10) If condensed whey containing at least 40% total solids has been partially crystallized by cooling, it may be transported to a separate milk plant for drying without repasteurization, provided that the following conditions are complied with:

(a) The condensed, partially crystallized whey is cooled and maintained at 7Â°C (45Â°F) or less.

(b) Milk tank trucks used to transport the condensed, partially crystallized whey are washed and sanitized immediately prior to filling and are sealed after filling until unloading.

(c) Separate unloading pumps and pipelines are provided and used only for the unloading of the condensed, partially crystallized whey. Such pumps and pipelines shall be cleaned and sanitized as a separate cleaning circuit.

(11) The design and operation of pasteurization equipment and all appurtenances thereto shall comply with the applicable standards, specifications, and operational procedures of this act.

**History:** 2001, Act 267, Eff. Feb. 8, 2002 ;-- Am. 2008, Act 147, Eff. June 27, 2008