Title 2—DEPARTMENT OF AGRICULTURE
Division 80—State Milk Board
Chapter 2—Grade "A" Pasteurized Milk Regulations

2 CSR 80-2.070 Standards for Milk and Milk Products. The State Milk Board is amending the purpose, sections (1), (2), (5), and (6).

PURPOSE: The purpose of this amendment is to update to the current revision of the Grade "A" Pasteurized Milk Ordinance and wording

PURPOSE: This rule provides standards which Grade "A" raw or pasteurized milk or milk products must meet with regard to cooling temperatures, bacterial limits, somatic cell counts, antibiotics, coliform limits, phosphatase determinations, and sanitation requirements for dairy farms, milk haulers, transfer stations, receiving stations, and milk plants. This rule corresponds with Section 7 of the ***federal Grade "A" Pasteurized Milk Ordinance*** *(PMO), [2015 Revision of the United States Department of Health and Human Services, Public Health Service, Food and Drug Administration]****, as adopted in 2 CSR 80-2.001****.*

PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproduction. This note applies only to the reference material. The entire text of the rule is printed here.

(1) All Grade "A" raw milk for pasteurization and all Grade "A" pasteurized milk and milk products shall be produced, processed, **manufactured** and pasteurized to conform [with]**to** the following chemical, **physical,** bacteriological, and temperature standards and the sanitation requirements of this rule. The *Grade "A" Pasteurized Milk Ordinance* (PMO), [*2015* Revision is hereby incorporated by reference as published by the United States Department of Health and Human Services, Public Health Service, Food and Drug Administration, Division of Plant and Dairy Food (HFS-316), 5100 Paint Branch Parkway, College Park, MD 20740-3835] **as adopted in 2 CSR 80-2.001**. This rule does not incorporate any subsequent amendments or additions to the Pasteurized Milk Ordinance (PMO).

(2) No process or manipulation other than pasteurization, processing **and packaging** methods integral to pasteurization, and appropriate refrigeration shall be applied to milk and milk products for the purpose of removing or deactivating microorganisms. Provided that in the bulk shipment of raw cream, skim milk, or lowfat milk, the heating of the raw milk to temperatures no greater than one hundred twenty-five degrees Fahrenheit (125 °F) (fifty-two degrees Celsius (52 °C)) for separation purposes is permitted when the resulting bulk shipments of cream, skim milk, and lowfat milk are labeled heat-treated.

Table 1—Chemical, Bacteriological, and Temperature Standards

Grade "A" raw milk **and milk products**	Temperature Cooled to 45 °F (7 °C

for pasteurization		or less within two (2) hours after milking, provided that the blend temperature first and subsequent milkings does not exceed 50 °F(10 °C).
	Bacterial limits	Individual producer milk not to exceed 100,000 per milliliter (mL) prior to commingling with other producer milk.
		Not to exceed 300,000 per mL as commingled milk prior to pasteurization.
	*[Antibiotics]***Drugs**	Tests and methodology as required by the [*2015] Grade "A" Pasteurized Milk Ordinance**, as *adopted in *2 CSR 80-2.001***.
		Commingled milk: Tests and methodology as required by the *[2015*] *Grade "A" Pasteurized Milk Ordinanc*e**, as adopted in 2 CSR 80-2.001**.
	Somatic cell count	Individual **cow** producer milk: Not to exceed 750,000 per mL . **Individual goat producer milk: Not to exceed 1,500,000 per mL.**
Grade "A" pasteurized milk and milk products	Temperature	Cooled to 45 °F (7 °C) or less and maintained thereat.

	Bacterial limits*	**Not to exceed** 20,000 per mL.
	Coliform	Not to exceed 10 per mL: provided that, in case of bulk milk transport tank shipments, shall not exceed 100 per mL.
	Phosphatase	Less than *[one (1) microgram per mL by the Schrarer Rapid Method or Methods approved in the 2015 Grade "A" Pasteurized Milk Ordinance.]* **350 milliunits/L for fluid products and other milk products by approved electronic phosphatse procedures**
"A" Pasteurized Ordinance.]	[*Antibiotics]***Drugs** *2015*	*[Test and methodology required by the Grade Milk* **No positive results on drug residue detection methods as referenced in Section 6. – Laboratory Techniques of the *Grade "A" Pasteurized Milk Ordinance*, as adopted in 2 CSR 80-2.001 which have been found to be acceptable for use with Pasteurized Milk and/or Milk Products.**

*Not applicable to cultured products.

(3) Ungraded Raw Milk for Pasteurization. Ungraded raw milk for pasteurization is raw milk which does not meet the requirements for Grade "A" raw milk for pasteurization.

(4) Ungraded Pasteurized Milk, Milk Pro-ducts, or both.

(A) Ungraded pasteurized milk, milk products, or both, are pasteurized milk, milk products, or both, which do not meet the requirements of Grade "A" pasteurized milk products.

(B) Only in an emergency, so declared by the regulatory agency, can raw or pasteurized fluid milk products which have not been graded or the grade of which is unknown, be sold, in which case these fluid milk or milk products shall be labeled Ungraded and these milk and milk products shall comply with antibiotic, phosphatase, and pesticide residue tolerances.

(5) Grade “A” Pasteurized Milk Regulation Items.

(A) Sanitation Requirements for Grade “A” Raw Milk for Pasteurization.

1. Abnormal milk—based upon bacteriological, chemical, or physical examination, *[cows*] **lactating animals** which show evidence of the secretion of abnormal milk in one (1) or more quarters shall be milked last or with separate equipment and the milk shall be discarded. *[Cows]* **Lactating animals** treated with, or *[cows]* **lactating animals** which have consumed chemical, medicinal, or radioactive agents which are capable of being secreted in the milk and which, in the judgment of the regulatory agency may be deleterious to human health, shall be milked last or with separate equipment and the milk disposed of as the regulatory agency may direct.

2. Milking barn, stable, or parlor—construction. On all dairy farms a milking barn, stable, or parlor shall be provided in which the milking herd shall be housed during milking time operations. The areas used for milking purposes shall—

A. Have floors constructed of concrete or equally impervious material;

B. Have walls and ceilings which are smooth, painted, or finished in an approved manner, in good repair, ceiling dust-tight;

C. Have separate stalls or pens for horses, calves, and bulls;

D. Be provided with natural light, artificial light, or both, well distributed for day and/or night milking, or both;

E. Provide sufficient air space and air circulation to prevent condensation and excessive odors;

F. Not be overcrowded; and

G. Have dust-tight covered boxes or bins or separate storage facilities for ground, chopped, or concentrated feed.

3. Milking barn, stable, or parlor—cleanliness. The interior shall be kept clean. Floors, walls, ceilings, windows, pipelines, and equipment shall be free of filth, litter, or both, and shall be clean. Swine and fowl shall be kept out of the milking barn.

4. Cowyard. The cowyard shall be graded and drained and shall have no standing pools of water or accumulations of organic wastes. Provided that in loafing or *[cattle]* **lactating animal** housing areas, *[cow]* **lactating animal** droppings and soiled bedding shall be removed or clean bedding added, at sufficiently frequent intervals to prevent the soiling of the *[cow's]* **lactating animals** udder and flanks. Waste feed shall not be allowed to accumulate. Manure packs shall be properly drained and shall provide a reasonably firm footing. Swine shall be kept out of the cowyard.

5. Milkhouse or room—construction and facilities. Milkhouse or room construction and facilities shall comply with the following:

A. A milkhouse or room of sufficient size shall be provided, in which the cooling, handling, and storing of milk and the washing, sanitizing, and storing of milk containers and utensils shall be conducted, except as provided for in paragraph (5)(A)12. of this rule;

B. The milkhouse shall be provided with a smooth floor constructed of concrete or equally impervious material graded to drain and maintained in good repair. Liquid waste shall be disposed of in a sanitary manner; all floor drains shall be accessible and shall be trapped if connected to a sanitary sewer system;

C. The walls and ceilings shall be constructed of smooth material, in good repair, well painted, or finished in an equally suitable manner;

D. The milkhouse shall have adequate natural light, artificial light, or both, and be well ventilated;

E. The milkhouse shall be used for no other purpose than milkhouse operations; there shall be no direct opening into any barn, stable, or into a room used for domestic purposes. Provided that a direct opening between the milkhouse and milking barn, stable, or parlor is permitted when a tight-fitting self-closing solid door(s) hinged to be single or double acting is provided;

F. Water under pressure shall be piped into the milkhouse;

G. The milkhouse shall be equipped with a two- (2-) compartment wash vat and adequate hot water heating facilities;

H. When a transportation tank is used for the cooling of milk, storage of milk, or both, on the dairy farm, the tank shall be provided with a suitable shelter for the receipt of milk. The shelter shall be adjacent to, but not a part of, the milkroom and shall comply with the requirements of the milkroom with respect to construction, light, drainage, insect and rodent control, and general maintenance; and

I. Effective July 1, 1985, all bulk milk cooling tanks, holding tanks, or both, in use shall be equipped with interval timing devices.

(I) Construction requirements. Interval timers shall be set and adjusted so that the milk will be agitated not less than five (5) minutes with a frequency of at least once every hour.

(II) Installation requirements. The installation and operation of interval timing devices shall be the responsibility of the milk producer.

6. Milkhouse or room—cleanliness. The floors, walls, ceilings, windows, tables, shelves, cabinets, wash vats, nonproduct contact surfaces of milk containers, utensils, and equipment, and other milkroom equipment shall be clean. Only articles directly related to milkroom activities shall be permitted in the milkroom. The milkroom shall be free of trash, animals, and fowl.

7. Toilet. Every dairy farm shall be provided with one (1) or more toilets, conveniently located and properly constructed, operated, and maintained in a sanitary manner. The waste shall be inaccessible to flies and shall not pollute the soil surface or contaminate any water supply.

8. Water supply. Water for milkhouse and milking operations shall be from a supply properly located, protected, and operated and shall be easily accessible, adequate, and of a safe, sanitary quality.

9. Utensils and equipment—construction. All multi-use containers, equipment, and utensils used in the handling, storage, or transportation of milk shall be made of smooth, nonabsorbent, corrosion-resistant, nontoxic materials and shall be so constructed as to be easily cleaned. All containers, utensils, and equipment shall be in good repair. All milk pails used for hand milking and stripping shall be seamless and of the hooded type. Multi-use woven material shall not be used for straining milk. All single-service articles shall have been manufactured, packaged, transported, stored, and handled in a sanitary manner and shall comply with the applicable requirements of paragraph (7)(B)11. of this rule. Articles intended for single-service shall not be reused.

A. Farm holding/cooling tanks, welded sanitary piping, and transportation tank shall comply with the applicable requirements of paragraphs (7)(B)10. and 11. of this rule.

10. Utensils and equipment—cleaning. The product-contact surfaces of all multi-use containers, equipment, and utensils used in the handling, storage, or transportation of milk shall be cleaned after each usage.

11. Utensils and equipment—sanitization. The product-contact surfaces of all multi-use containers, equipment, and utensils used in the handling, storage, and transportation of milk shall be sanitized before each usage.

12. Utensils and equipment—storage. All containers, utensils, and equipment used in the handling, storage, or transportation of milk, unless stored in sanitizing solutions, shall be stored to assure complete drainage and shall be protected from contamination prior to use. Provided that milk pipelines and pipeline milking equipment, such as milker claws, inflations, weigh jars, meters, milk hoses, milk receivers, and milk pumps which are designed for mechanical cleaning, may be stored in the milking barn or parlor provided this equipment is designed, installed, and operated to protect the product- and solution-contact surfaces from contamination at all times.

13. Utensils and equipment—handling. After sanitization, all containers, utensils, and equipment shall be handled in a manner as to prevent contamination of any product-contact surface.

14. Milking—flanks, udders, and teats. Milking shall be done in the milking barn, stable, or parlor. The flanks, udders, bellies, and tails of all milking *[cows]* **animals** shall be free from visible dirt. All brushing shall be completed prior to milking. The udders and teats of all milking *[cows]* **animals** shall be cleaned and treated with a sanitizing solution just prior to the time of milking and shall be relatively dry before milking. Wet hand milking is prohibited.

15. Milking—surcingles, milk stools, and antikickers. Surcingles, milk stools, and antikickers shall be kept clean and stored above the floor.

16. Protection from contamination. Milking and milkhouse operations, equipment, and facilities shall be located and conducted to prevent any contamination of milk, equipment, containers, and utensils. No milk shall be strained, poured, transferred, or stored unless it is properly protected from contamination.

17. Personnel—handwashing facilities. Adequate handwashing facilities shall be provided, including a lavatory fixture with running water, soap or detergent, and individual sanitary towels, in the milkhouse and in or convenient to the milking barn, stable, parlor, or flush toilet.

18. Personnel—cleanliness. Hands shall be washed clean and dried with an individual sanitary towel immediately before milking, performing any milkhouse function, and immediately after the interruption of any of these activities. Milkers and milk haulers shall wear clean outer garments while milking or handling milk, milk containers, utensils, or equipment.

19. Cooling. Raw milk for pasteurization shall be cooled to forty-five degrees Fahrenheit (45 °F) (7 °C) or less within two (2) hours after milking, provided that the blend temperature after the first milking and subsequent milkings does not exceed fifty degrees Fahrenheit (50 °F) (10 °C).

20. Vehicles. Vehicles used to transport milk from the dairy farm to the milk plant or receiving station shall be constructed and operated to protect their contents from sun, freezing, and contamination. These vehicles shall be kept clean, inside and out; and no substance capable of contaminating milk shall be transported with milk.

21. Insect and rodent control. Effective measures shall be taken to prevent the contamination of milk, containers, equipment, and utensils by insects and rodents and by chemicals used to control vermin. Milkrooms shall be free of insects and rodents. Surroundings shall be kept neat, clean, and free of conditions which might harbor or be conducive to the breeding of insects and rodents.

(6) To secure and hold a valid permit, license, or both, a hauler shall meet the following requirements governing Grade “A” milk haulers, the collection of Grade “A” milk from farm bulk milk cooling tanks, storage tanks, or both, and the collection and care of Grade “A” milk samples:

(A) General Requirements.

1. All bulk tank trucks, associated and auxiliary equipment, shall be maintained in a clean and sanitary condition and shall be in good repair.

2. Whenever a bulk tank truck has been cleaned and sanitized, as required by the regulatory agency, it shall bear a tag showing the date, time, place, and signature of the employee or contract operator doing the work, unless the truck delivers to only one (1) receiving unit where responsibility for cleaning and sanitizing can be definitely established without tagging. The tag is to be removed at the first stop on route and kept on file for the regulatory agency.

3. Milk shall never be collected at a producer farm during the milking operation. Partial collections of milk from a bulk cooling tank, storage tank, or both, are prohibited without special permission from the regulatory agency.

4. Milk which has not been cooled to forty-five degrees Fahrenheit (45 °F) (7 °C) within two (2) hours after milking or on which the blend temperature after the first milking and subsequent milkings has exceeded fifty degrees Fahrenheit (50 °F) (10 °C) shall not be collected. Except that where recording thermometer charts are available, milk may be collected provided it complies with standards adopted by the regulatory agency.

5. Abnormal milk shall not be collected.

6. The tank truck pump and hose shall be handled in a sanitary manner and shall be protected during the collection procedure.

7. An accurate complete record of each producer's milk pick-up shall be kept. This shall include producer number and name; milk measurement, weight, or both; date and time of collection; temperature of the milk; remarks on condition or quality; and the hauler's signature or initials.

8. Hauling of toxic materials in bulk milk tank trucks is prohibited. Permission to haul nontoxic material other than Grade "A" milk, milk products, or both, must be obtained from the regulatory agency on an individual basis;

(B) Permits and Licenses.

1. All milk haulers must possess a license from the state Department of Agriculture and a permit from the regulatory agency. The permit, license, or both, are subject to suspension or revocation whenever any of the laws or rules are violated on the second consecutive inspection. Flagrant violations on the part of the hauler, such as fraudulent practices, intentional adulteration, or any actions adversely affecting the integrity of producer milk samples, shall result in immediate permit suspension [*in accordance with 2 CSR 80-2.030 (Section 3 of the PMO)],* court action, or both.

2. A temporary permit may be given in the field by the regulatory agency to an applicant who satisfactorily passes a**n** *[written]* examination and who possesses a temporary license issued through the *[dairy program of the Missouri Department of Agriculture]* **regulatory authority**. The temporary permit may be revoked for cause at any time. Regular status of a temporary permit, license, or both, is acquired only after an applicant satisfactorily passes a hauler training course provided by a company or organization if the training course has been approved by the *[dairy program of the Missouri Department of Agriculture]* **State Milk Board** and the regulatory agency.

3. An approved hauler training course should include the following:

A. Basic milk microbiology;

B. Milk quality tests and what they mean;

C. Evaluation and detection of flavors and odors;

D. Sampling and bacteriological, chemical, and physical analysis;

E. Sampling, why and how to handle samples;

F. Cleaning and sanitizing of dairy equipment;

G. Milk and its composition;

H. The how and why of tank calibration; **and**

[I. State and local laws and rules governing bulk milk; and]

[J] **I.** Procedures for the collection of milk from farm cooling or storage tanks, or both;

(C) Requirements Pertaining to the Operator.

1. The operator must maintain a neat and clean appearance and must have clean habits.

2. The operator must be able to differentiate between normal and abnormal milk.

3. The operator must not use tobacco in the milkroom.

4. The operator must carry an approved thermometer for checking milk temperature.

5. The operator must carry a suitable container bearing a bactericidal solution and appropriate brushes to give supplemental bactericidal treatment for bulk tank valve, tank truck hose opening, and other equipment as the need is indicated;

(D) Hauler Procedure at the Farm.

1. Examine the milk for off odor and any other abnormalities which would class the milk as unmarketable. Wash hands thoroughly and dry with clean single-service towel immediately prior to measuring, sampling the milk, or both.

2. Measure the milk before agitation. If the agitator is running upon arrival, the measurement can be taken only after the surface of the milk has been undisturbed for at least two (2) minutes. An accurate cold stick reading shall be used for milk measurement.

3. If the agitator is running upon arrival, run it at least five (5) minutes before sampling and recording temperature. If the agitator is not running, it must be started and run for at least five (5) minutes before sampling.

4. Identify sample container and collect sample.

5. Sanitize the hauler's thermometer when used to check accuracy of tank thermometer or before use when tank thermometer is inoperable.

6. After pumping milk into tank truck, disconnect and cap hose and replace hose in truck. Be sure porthole cover is closed. Rinse tank and porthole thoroughly with tempered water.

7. When a route collection has started, complete it without any unnecessary delay;

(E) Procedures and Practices Concerning Sampling. A sample which will qualify for bacteriological analysis (universal sampling) shall be properly collected at each stop on the route. The sample shall be handled properly and subsequently delivered to the proper destination. While on the pick-up route, the hauler shall have an adequate supply of sample containers available. These containers shall be properly stored and handled. An approved sampling dipper or single-service sampling tubes shall be provided and must be maintained and handled to avoid possible contamination of the sample. The following procedures shall be carried out when collecting any sample:

1. Identify the sample container with the producer number, the date, time of day, and temperature;

2. Bring sample container, dipper, and dipper container or single-service sampling tubes into the milkroom. Dipper container must contain chlorine solution of one hundred to two hundred parts per million (100–200 ppm) or other approved bactericide at all times while on the route. Dipper must be kept clean;

3. Open sample container carefully and avoid contamination of the milk contact surfaces;

4. Immerse the sample dipper at least three (3) times in the milk, completely emptying each time. This will eliminate any remaining sanitizing solution in the dipper;

5. Collect representative sample or samples from the farm tank;

6. Do not hold sample container over the milk in the tank;

7. Rinse the sample dipper free of milk and place in its carrying container; and

8. Place sample or samples in cooling medium immediately after collection; and

(F) Specifications Which Are Related to Sampling.

1. All sample containers and single-service sampling tubes used for samples to determine bacteria counts shall be sterile. Samples shall be cooled to and held between thirty-two degrees Fahrenheit (32 °F) (0 °C) and forty degrees Fahrenheit (40 °F) (4 °C) during transit to the laboratory. Multi-use sampling dippers shall be cleaned and sanitized.

2. Sample containers shall have space to properly identify sample.

3. Means shall be provided to properly protect sample in sample case.

4. Adequate racks also shall be provided when plastic sample bags are used. Other methods may be used as approved by the regulatory agency.

5. Adequate insulation of sample container box or ice chest shall be provided to keep samples from freezing during cold weather.

6. An extra sample of milk shall be collected and properly identified as a temperature sample at the first stop on each route and placed in the cooling medium as a temperature check.

7. Samples for butterfat and bacterial counts shall not be taken from tanks which contain frozen or churned milk.

(7) Sanitation Requirements for Grade "A" Pasteurized Milk and Milk Products.

(A) A receiving station shall comply with paragraphs (7)(B)1.–15., 17., 20., and 22., except that the partitioning requirement of paragraph (7)(B)5. shall not apply.

(B) A transfer station shall comply with paragraphs (7)(B)1., 4., 6.–12., 14., 15., **17.,** 20., and 22.; and as climatic and operating conditions require, the applicable provisions of paragraphs (7)(B)2. and 3., provided that in every case, overhead protection shall be provided. Facilities for the cleaning and sanitizing of bulk milk pick-up tanker and milk transport tanks shall comply with paragraphs (7)(B)1., 4., **6.–12**[*5*]., **14., 15.,** 20., and 22.; and as climatic and operating conditions require, the applicable provisions of paragraphs (7)(B)2. and 3., provided that in every case, overhead protection shall be provided.

1. Floors—construction. The floors of all rooms in which milk or milk products are processed, handled, or stored, or in which milk containers, equipment, and utensils are washed shall be constructed of concrete or other equally impervious and easily cleaned material; and shall be smooth, properly sloped, provided with trapped drains, and kept in good repair. Provided that cold-storage rooms used for storing milk and milk products need not be provided with floor drains when the floors are sloped to drain to one (1) or more exits. Provided further that storage rooms for storing dry ingredients, packaging materials, or both, need not be provided with drains and the floors may be constructed of tightly joined wood.

2. Walls and ceilings—construction. Walls and ceilings of rooms in which milk or milk products are handled, processed, or stored, or in which milk containers, utensils, and equipment are washed, shall be in good repair with a smooth, washable, light-colored surface.

3. Doors and windows. Effective means shall be provided to prevent the access of flies and rodents. All openings to the outside shall have solid doors or glazed windows which shall be closed during dusty weather.

4. Lighting and ventilation. All rooms in which milk or milk products are handled, processed, or stored, in which milk containers, equipment, and utensils are washed, or both, handled and washed, shall be well lighted and well ventilated.

5. Separate rooms. There shall be separate rooms for the pasteurizing, processing, cooling, and packaging of milk and milk products; the cleaning of milk cans, bottles, and cases; the cleaning and sanitizing facilities for milk tank trucks in plants receiving milk in those tanks; and receiving cans of milk and milk products in plants receiving those cans. Rooms in which milk or milk products are handled, processed, or stored, or in which milk containers, utensils, and equipment are washed or stored, shall not open directly into any stable or any room for domestic purposes. All rooms shall be of sufficient size for their intended purposes.

6. Toilet—sewage disposal facilities. Every milk plant shall be provided with toilet facilities conforming with the regulations of the state of Missouri. Toilet rooms shall not open directly into any room in which milk, milk products, or both, are processed. Toilet rooms shall be completely enclosed and shall have tight-fitting, self-closing doors. Dressing rooms, toilet rooms, and fixtures shall be kept in a clean condition, in good repair, and shall be well ventilated and well lighted. Sewage and other liquid wastes shall be disposed of in a sanitary manner.

7. Water supply. Water for milk plant purposes shall be from a supply properly located, protected, and operated and shall be easily accessible, adequate, and of a safe, sanitary quality.

8. Handwashing facilities. Convenient handwashing facilities shall be provided, including hot and cold or warm running water, soap, and individual sanitary towels or other approved hand drying devices. Handwashing facilities shall be kept in a clean condition and in good repair.

9. Milk plant cleanliness. All rooms in which milk and milk products are handled, processed, or stored, and in which containers, utensils, or equipment are washed or stored, shall be kept clean, neat, and free of evidence of insects and rodents. Only equipment directly related to processing operations or to handling of containers, utensils, and equipment shall be permitted in the pasteurizing, processing, cooling, packaging, and bulk milk storage rooms.

10. Sanitary piping. All sanitary piping, fittings, and connections which are exposed to milk or milk products, or from which liquids may drip, drain, or be drawn into milk or milk products, shall consist of smooth, impervious, corrosion-resistant, nontoxic, easily cleanable material. All piping shall be in good repair. Pasteurized milk and milk products shall be conducted from one piece of equipment to another only through sanitary piping. Provided that cottage cheese, cheese dressings, or cheese ingredients may be transported by other methods which protect the product from contamination.

11. Construction and repair of containers and equipment. All multi-use containers and equipment with which milk or milk products come into contact shall be of smooth, impervious, corrosion-resistant, nontoxic material, shall be constructed for ease of cleaning, and shall be kept in good repair. All single-service containers, closures, gaskets, and other articles with which milk or milk products come in contact shall be nontoxic and shall have been manufactured, packaged, transported, and handled in a sanitary manner. Articles intended for single-service use shall not be reused.

12. Cleaning and sanitizing of containers and equipment. The product-contact surfaces of all multi-use containers, utensils, and equipment used in the transportation, processing, handling, and storage of milk or milk products shall be effectively cleaned and shall be sanitized before each use.

13. Storage of cleaned containers and equipment. After cleaning, all multi-use milk or milk product containers, utensils, and equipment shall be transported and stored to assure complete drainage and shall be protected from contamination before use.

14. Storage of single-service containers, utensils, and materials. Single-service caps, cap stock, parchment paper, containers, gaskets, and other single-service articles for use in contact with milk and milk products shall be purchased and stored in sanitary tubes, wrappings, or cartons, shall be kept in a clean, dry place until used, and shall be handled in a sanitary manner.

15. Protection from contamination. Milk plant operations, equipment, and facilities shall be located and conducted to prevent any contamination of milk or milk products, ingredients, equipment, containers, and utensils. All milk or milk products or ingredients which have spilled, overflowed, or leaked shall be discarded. The processing or handling of products other than fluid milk and milk products in the pasteurization plant shall be performed to preclude the contamination of milk and milk products. The storage, handling, and use of poisonous or toxic materials shall be performed to preclude the contamination of milk and milk products, the ingredients of milk and milk products, or the product-contact surfaces of all equipment, containers, or utensils.

[16. Pasteurization. Pasteurization shall be performed as in 2 CSR 80-2.010(1)(T).]

*[17]***16**. Cooling of milk. All raw milk and milk products shall be maintained at forty-five degrees Fahrenheit (45 °F) (7 °C) or less until processed. All pasteurized milk and milk products, except those to be cultured, shall be cooled immediately prior to filling or packaging in approved equipment to a temperature of forty-five degrees Fahrenheit (45 °F) (7 °C) or less. All pasteurized milk and milk products shall be stored at a temperature of forty-five degrees Fahrenheit (45 °F) (7 °C) or less. On delivery vehicles, the temperature of milk and milk products shall not exceed fifty degrees Fahrenheit (50 °F) (10 °C). Every room or tank in which milk or milk products are stored shall be equipped with an accurate thermometer.

*[18]***17**. Bottling and packaging. Bottling and packaging of milk and milk products shall be done at the place of pasteurization in approved mechanical equipment. Provided that cottage cheese may be transported in sealed containers in a protected, sanitary manner from one (1) plant to another for creaming, packaging, or both.

*[19]***18**. Capping. Capping or closing of milk and milk product containers shall be done in a sanitary manner by approved mechanical capping, closing equipment, or both. The cap or closure shall be designed and applied in a manner that the pouring lip is protected to at least its largest diameter and with respect to fluid product containers, removal cannot be made without detection.

*[20]***19**. Personnel—cleanliness. Hands shall be thoroughly washed before commencing plant functions and as often as may be required to remove soil and contamination. No employee shall resume work after visiting the toilet room without thoroughly washing his/her hands. All persons shall wear clean outer garments while engaged in the processing, pasteurization, handling, storage, or transportation of milk, milk products, containers, equipment, and utensils. All persons while engaged in the processing of milk or milk products shall wear adequate hair coverings and shall not use tobacco.

*[21]***20**. Vehicles. All vehicles used for transportation of pasteurized milk and milk products shall be constructed and operated so that the milk and milk products are maintained at forty-five degrees Fahrenheit (45 °F) (7 °C) or less, and are protected from sun, freezing, and contamination.

*[22]***21**. Surroundings. Milk plant surroundings shall be kept neat, clean, and free from conditions which might attract or harbor flies, other insects, and rodents or which otherwise constitutes a nuisance.

AUTHORITY: section 196.939, RSMo 2000. Original rule filed April 20, 1973, effective April 30, 1973. Rescinded and readopted: Filed March 11, 1980, effective July 1, 1980. Amended: Filed Feb. 1, 1990, effective April 26, 1990. Amended: Filed Feb. 15, 2007, effective July 30, 2007. Amended: Filed Aug. 3, 2009, effective Jan. 30, 2010. Amended: Filed March 13, 2012, effective Sept. 30, 2012. Amended: Filed July 23, 2014, effective Jan. 30, 2015. Amended: Filed April 22, 2016, effective Oct. 30, 2016.*

**Original authority: 196.939, RSMo 1972, amended 1993, 1994, 1995.*

PUBLIC COST: This proposed amendment will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed amendment will not cost private entities more than five hundred dollars ($500) in the aggregate.

NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed amendment with the State Milk Board, 1616 Missouri Boulevard, Jefferson City, MO 65109 or online at agriculture.mo.gov/proposed-rules/. *To be considered, comments must be received with in thirty (30) days after publication of this notice in the Missouri Register. No public hearing is scheduled.*