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PROPOSED REGULATIONS GOVERNING MILK, MILK PRODUCTS, AND FROZEN DESSERTS

The subject proposed regulations have been on file in the Department of Records since January 7, 1959.

These regulations were advertised in the three daily papers: the Bulletin, the Inquirer, and the Daily News.

Since no inquiries were received as a result of this advertising, the subject proposed regulations having been on file in this department for the required thirty (30) days are now in effect.

cc James P. Dixon, Commissioner of Public Health
Henry V. Walkowiak, Secretary to the Board of Health
Leander Krammel, Assistance City Solicitor
File (2)

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DEPARTMENT OF PUBLIC HEALTH

Pursuant to Section 5-301(b) of the Home Rule Charter and Sections 6-301(7), (8); 6-302; 6-305(2), (3), (4), (5) of the Code of General Ordinances of the City of Philadelphia, the following regulations are promulgated by the Board of Health:

In this regulation, the following definitions apply:

- A. Approved. Satisfactory compliance as determined and recorded by the Department of Public Health.
- B. Milk. The lacteal secretion obtained by the milking of one or more cows or goats.
- C. Milkfat or Butterfat. The fat of milk.
- D. Cream. A portion of milk which contains not less than 18 percent milkfat.
- E. Sour cream. Cream the acidity of which is more than 0.20 percent, expressed as lactic acid.
- F. Vitamin D milk. Milk the vitamin D content of which has been increased by an approved method to at least 400 U.S.P. units per quart.
- G. Milk Producer. Any person who owns or controls one or more cows, a part or all of the milk or milk products from which is sold, offered for sale, or supplied for human consumption.
- H. Dairy Farm. Any place or premises where one or more cows or goats are kept, a part or all of the milk or milk products of which is sold or delivered to any person for human consumption.
- I. Sanitary Milk Piping. Properly designed and constructed piping and fittings for the conveyance of milk, milk products or frozen desserts or ingredients used therein.

J. Auxiliary Equipment. Equipment not in physical contact with milk, milk products or frozen desserts, but present in a milk plant or frozen desserts plant, such as lighting, ventilation, electrical equipment and similar equipment.

K. Utensils or Equipment. Utensils or equipment used in the receiving, processing, packaging, storage or transport of milk, milk products or frozen desserts.

L. Containers. Containers used in the receiving, processing, packaging, storage, and transport of milk, milk products or frozen desserts.

M. Frozen Desserts. Any frozen or partially frozen product or mix for freezing, (a) containing milk, milk products or milk derivatives, including ice cream, frozen custard, milk sherbet, ice milk, and any other similar product, or (b) combining water, sugar, fruit, stabilizer, flavoring, whether natural or artificial, including ice, shaved ice, water sherbet, and any other similar product.

N. Milk Derivatives. Butter, cheese, condensed milk, condensed skim milk, evaporated milk, powdered milk, and powdered milk products.

O. Milk Plant. Any food establishment where milk is collected, separated, processed, stored, bottled, pasteurized or prepared in any manner for sale as milk or milk products.

P. Milk Products. Skim milk, non-fat milk, cream, sour milk, sour cream, buttermilk, flavored milk, cultured milk, cottage cheese, creamed cottage cheese, Mozzarella cheese, Ricotta cheese, and all other fluid derivatives of milk except those defined as milk derivatives.

Q. Frozen Dessert Plant. Any food establishment where frozen dessert or mix is manufactured, processed, frozen or packaged for sale; except establishments obtaining mix from others and freezing or processing it on the premises, and selling it at retail only.

R. Certified Milk. Milk which is produced and handled in compliance with the standards established by the regulations of the Board of Health which are based upon the "Methods and Standards for the Production and Distribution of Certified Milk" as adopted by the American Association of Medical Milk Commissions, Inc.

S. Communicable Disease. An illness or infectious disease which is transmissible directly or indirectly by a person, animal, arthropod, or through the agency of an intermediate host, vector, or the inanimate environment to another person.

The following regulations shall apply to milk plants and frozen dessert plants located in the City of Philadelphia or selling or delivering their products to persons in the City:

II. FLOORS

The floor of all rooms in which milk, milk products and frozen desserts are handled or stored, or in which utensils are washed, shall be constructed of impervious and easily-cleaned material, and shall be smooth, properly drained, provided with trapped drains, and kept clean and in good repair. All other floors in milk plants and frozen dessert plants shall be constructed of easily cleaned material and kept clean and in good repair.

III. WALLS AND CEILINGS

Walls and ceilings of rooms in which milk, milk products and

frozen desserts are handled or stored, or in which utensils are washed shall have a smooth, washable, light-colored surface, and shall be kept clean and in good repair and such walls shall be constructed of an impervious material to a height four (4) feet above the floor level. All other walls and ceilings shall be kept clean and in good repair.

IV. OPENINGS TO THE OUTSIDE

From May 1 to November 1, rooms in which milk, milk products or frozen desserts are handled or stored, or in which utensils are washed, shall have all openings to the outside effectively screened and all outer doors self-closing for the exclusion of flies. The Department of Public Health may approve other methods or devices which effectively exclude flies, to be used instead of screening openings to the outside.

V. LIGHTING

Rooms in which milk, milk products or frozen desserts are handled, or in which utensils are washed shall be provided with natural or artificial light sufficient to provide an illumination of at least twenty (20) foot candles on all working surfaces and in all working areas. Rooms used only for dry storage and cold storage shall be provided with sufficient light to provide illumination of at least four (4) foot candles at a point thirty inches (30) above the floor.

VI. VENTILATION

Rooms in which milk, milk products or frozen desserts are handled or in which utensils are washed, shall be kept free of objectionable odors, condensate and excess moisture. Exhaust outlets

from mechanical ventilating devices shall be conducted to the outside air and shall be so arranged, placed and extended as to avoid creating a nuisance to adjacent areas, as prescribed in Title 3 of the Code of General Ordinances and any regulations thereunder.

VII. TOILET FACILITIES

Conveniently located toilet facilities conforming to the Plumbing Code and regulations and the Air Pollution Code and regulations shall be provided in the plant. Toilet room shall be enclosed and the toilet room doors shall be self-closing. Toilet rooms shall be constructed with easily washable floors and walls. Toilet rooms and appurtenances shall be kept clean, well illuminated and in good repair. Toilet rooms shall be ventilated to the outside air. Durable legible signs shall be posted conspicuously in each toilet room directing employees to wash their hands before returning to work. Plumbing in plants outside of the City of Philadelphia shall conform to requirements equivalent to those of the Philadelphia Plumbing Code. Toilet room doors shall not open directly into a processing area.

VIII. HANDWASHING FACILITIES

Adequate handwashing facilities, consisting of handwashing sinks with hot and cold running water located not more than fifteen (15) feet outside the toilet room, and soap and individual sanitary towels or other approved drying facilities in suitable holders or dispensers shall be available at all times and kept clean and in good repair. Common towels are prohibited. No person shall resume work after using the toilet room without first washing his hands. Handwashing sinks with hot and cold running water, soap and sanitary

towels shall be provided in or no more than fifty (50) feet from the entrance point of any room in which milk plant or frozen desserts operations are conducted and on the same floor level as each room.

IX. WATER SUPPLY

Hot and cold running water, under pressure, in amounts adequate to supply the peak demands of the plant shall be provided in all rooms where milk, milk products or frozen desserts are handled or utensils are washed. The water supply shall be of a safe, sanitary quality. All plumbing and water supply shall conform to the Plumbing Code and regulations and applicable regulations of the Department of Public Health and the Water Department of the City of Philadelphia. Cross-connections or backflow connections as defined in American Standard National Plumbing Code, ASA A 40.8 - 1955 and including connections, conditions or arrangements between a potable water supply and any other water supply, plumbing or drainage system, water receptacle or liquid or other substance or between the City water supply and any other water supply such that backflow can occur, are prohibited. Water supply in plants outside of Philadelphia shall conform to equivalent requirements.

X. DISPOSAL OF WASTES

(A) All liquid wastes shall be disposed of in accordance with the requirements of the Plumbing Code and regulations. Liquid waste disposal in plants outside of the City shall conform to equivalent requirements; except that where public sewers are not available, the liquid wastes shall be disposed of by methods which are not conducive to fly-breeding or other insanitary conditions and which are approved by the Pennsylvania Department of Health

and the Philadelphia Department of Public Health.

(B) All plumbing and drain lines shall be designed, installed and maintained so as to prevent contamination of milk utensils or equipment and all overhead drains and piping shall be so installed that possible leakage and condensation are directed away from the milk, equipment, and utensils.

(C) No trash or garbage shall be present upon the plant premises except in **tightly** covered impervious containers. Waste containers may be uncovered only when in actual use. All such containers shall be washed and cleaned when emptied.

XI. CLEANING AND BACTERICIDAL TREATMENT

(A) All milk and milk product or frozen dessert containers, equipment and utensils, except single-service containers, shall be thoroughly cleaned after each usage. Any equipment in continuous use shall be thoroughly cleaned at least once in every twenty-four (24) hour period. The cleaned containers, utensils or equipment shall be subjected to an approved bactericidal process before usage.

Approved final bactericidal treatment for washing and sanitizing containers, utensils, and equipment shall mean the treatment by one of the following methods:

(1) Hot water at a minimum temperature of 170°F. for at least three (3) minutes.

(2) Such bactericidal methods and processes as may be approved by the Department.

No compound or method shall be used in the washing or the bactericidal treatment of containers, equipment and utensils unless it has been demonstrated that no toxic residue is left in its normal

manner of use. No bactericidal agent for the bactericidal treatment of containers, equipment and utensils shall be used for which there is not available a satisfactory field test for the determination of the concentration of the bactericidal solution. Where bottles are subjected to bactericidal treatment by steam, hot water, or chemicals in automatic bottle washers, the subsequent final rinsing of the bottles shall be with water which has been treated with heat or chemicals to assure freedom from viable pathogenic organisms and to prevent recontamination of the bactericidal treatment bottle during the rinsing operation.

(B) Cleaned-in-place milk and frozen dessert lines may be used providing they conform to the following requirements:

- (1) The average velocity of the cleaning solution shall be not less than five (5) feet per second.
- (2) The milk pipe line shall slope up from the pump to the outlet, without any dips, to provide for self-drainage of the solutions and for maintenance of full lines during circulation and to insure contact of solutions with all milk-contact surfaces.
- (3) A separate pump of adequate capacity shall be provided to maintain full lines for the particular circuit. Valves in the line, except at the outlet, shall be fully open, to prevent decrease in velocity during circulation of cleaning and bactericidal solutions.
- (4) The circulating system shall consist of one or more solution tanks connected to the suction side of a pump large enough to circulate solutions at the

specified velocity; and the circulating system shall be so designed and operated as to maintain full lines throughout the circulating period.

- (5) A recording thermometer of proper range shall be connected to the return line near its downstream end, to maintain a record of the temperature and the time when the line is exposed to cleaning and bactericidal solutions, and the thermometer charts shall be dated and kept on file for three (3) months.
- (6) Wash solution temperatures shall not fall below 120°F.
- (7) The lines shall be rinsed. All caps, plugs, and special fittings, including valve seats, crosses and tee ends, shall be removed and brushed clean, and the lines examined and brushed if necessary. Used solutions shall be discarded, the solution tank thoroughly cleaned each day, and fresh solutions prepared daily. The outside of the lines also shall be cleaned.
- (8) After reassembling, and shortly before starting milk flow, the lines shall be given an approved bactericidal treatment as specified in Regulation XI.

XII. STORAGE

After bactericidal treatment, all bottles, cans, and other multi-use milk, milk product and frozen dessert containers and equipment shall be transported and stored in such a manner as to be protected from contamination. Milk bottle caps or cap stock, parchment paper, single-service containers, frozen dessert cartons, wrappers, can liners, and single-service sticks and spoons and gaskets shall

be sanitary and stored only in sanitary tubes, wrappings or cartons; shall be kept therein in a clean, dry place until used; and shall be handled in a sanitary manner.

Suitable cabinets or rooms shall be provided for the storage of caps, cap stock, parchment paper, cartons, single-service sticks and spoons, wrappers, can liners and gaskets.

VIII. CONSTRUCTION AND MAINTENANCE

All utensils, equipment, or containers, used in a plant shall be constructed as to be easily cleaned and shall be maintained in good repair, and operated in a sanitary manner. All containers, utensils or equipment the surfaces of which come into contact with milk, milk products or frozen desserts shall be made of stainless steel or other smooth, corrosion resistant non-toxic material, kept in good repair and free of breaks, chips, cracks, rough areas, corrosion and open seams. Milk, milk product or frozen dessert contact surfaces shall drain freely and shall be easily accessible for cleaning, servicing and inspection.

Stationary equipment shall be installed and maintained in such a manner as to prevent the harboring of rodents, and arthropods and to facilitate cleaning.

All piping used to conduct milk or milk products or frozen desserts shall be sanitary milk piping of a type which can be easily cleaned. Pasteurized milk and milk products or frozen desserts shall be conducted from one piece of equipment to another only through sanitary milk piping. The use of rubber, plastic and similar material is permitted only when approved by the Department.

Cleaned-in-place milk pipe lines shall be self-draining, and also have joints provided with self-positioning, flexible gaskets of non-toxic, low-absorption material, and of such design as to form a flush, interior joint; or have self-positioning joints, of such design and finish as to form a smooth, flush interior; or have all joints welded and smoothly polished on the interior face, and are provided, at all changes in direction, with welded crosses equipped with removable caps, or removable elbows, or welded elbows provided with inspection openings of adequate size. Return, recirculating lines shall be installed, and shall be of the same or equivalent material and construction as the milk line.

The Department of Public Health may adopt or develop standards for the construction and design of utensils, equipment and containers consistent with the provisions of this regulation, to be used for reference and interpretation purposes.

XIV. HANDLING OF CONTAINERS, UTENSILS AND EQUIPMENT

Between bactericidal treatment and usage, and during usage, containers, utensils and equipment shall not be handled or operated in such a manner as to permit contamination of the milk. Pasteurized milk, frozen desserts or milk products shall not come into contact with equipment with which unpasteurized milk or frozen desserts or milk products have been in contact, unless the equipment has first been thoroughly cleaned and subjected to an approved bactericidal process.

XV. PASTEURIZATION

Pasteurization shall be the process whereby every particle of milk or milk products is heated to at least 145°F. with holding at

such temperature continuously for at least thirty (30) minutes or to at least 161°F. with holding at such temperature continuously for at least fifteen (15) seconds in approved and properly operated equipment, except that in the case of frozen desserts the conditions shall be 155°F. with continuous holding at such temperature for at least thirty (30) minutes or 175°F. with continuous holding at such temperature for at least twenty-five (25) seconds in approved and properly operated equipment; or other process whereby every particle of milk, milk products, or frozen desserts is heated to such temperature and held continuously for such period of time as the Department may declare to afford equivalent protection against contamination.

(A) Requirements for Vat Pasteurizers:

- (1) No batch of milk, frozen desserts, or milk products shall be pasteurized unless it covers a sufficient area of the agitator to insure adequate agitation.
- (2) Each vat pasteurizer shall be equipped with both an indicating and a recording thermometer.

The temperature shown by the recording thermometer shall be checked daily during the pasteurization process against the temperature shown by the indicating thermometer and the readings shall be recorded on the recording chart. No batch of milk, milk products, or frozen desserts shall be pasteurized unless it has sufficient volume to cover the bulbs of both the indicating and the recording thermometers. The recording thermometer shall be kept so adjusted as never to read higher

than the indicating thermometer.

- (3) No milk, milk products, or frozen desserts shall be added to the vat pasteurizer after the start of the holding period. No raw milk, milk products or frozen desserts shall bypass around the vat pasteurizer.
- (4) All inlet pipe lines and outlets from vat pasteurizers shall be equipped with leak-protector valves.

All leak-protector valves shall be in proper working order and installed in such a position as to insure the functioning of the leak-diverting device. Inlet valves shall not be located in vertical pipe lines, unless they can be so installed that one of the groove systems is at the lowest level of the valve.

- (5) Means shall be provided and used in pasteurization vats to keep the atmosphere above the milk, milk products or frozen dessert at a temperature not less than 5°F. higher than the milk or frozen dessert temperature during the heating period; and not less than 5°F. higher than the required temperature of pasteurization during the holding

period. This requirement may be waived when thirty (30) minute pasteurization of milk and such milk products as buttermilk and chocolate milk is done at higher temperatures, provided an air-space thermometer is installed as required and such thermometer indicates an air-temperature of at least 5°F. higher during the holding period than the required pasteurization temperature. In all cases, an approved air-temperature indicating thermometer shall be provided during the holding period.

- (6) The covers of pasteurization vats shall be so constructed that nothing on top thereof will drop into the vat when it is either open or closed.

All openings through the cover shall have a raised edge to prevent drainage into the opening. Condensation diverting aprons shall be provided,

as close to the cover as possible, on all pipes, thermometers, and other equipment which extend through the cover and on which condensation may form, unless a water-tight joint with the cover is provided.

The covers of all vats must be kept closed during operation.

(B) Requirements for High-Temperature Short-Time Pasteurizers

Each high-temperature short-time system shall be equipped with a dependable thermostatic control, so designed and so set as to cause every particle of milk, milk product, or frozen dessert to be heated automatically to at least 161°F., for milk and milk products, and 175°F. for frozen desserts.

- (1) Each such system shall be equipped with an automatic milk-flow stop of the diversion type.
- (2) The control mechanism of the milk-flow stop shall be set and sealed, so that the forward flow of milk can not start unless the temperature at the controller bulb is above the required pasteurization temperature nor continue during descending temperatures when that temperature is below the required pasteurization temperature. The seal shall be applied by the Department after test, and shall not be removed without immediately notifying the Department by telephone and confirming this notice by mail within twenty-four (24) hours. The system shall be so designed that milk,

milk products and frozen desserts can not be by-passed around the flow-stop bulb, which shall not be removed from its proper position during the pasteurization process. The cut-in and cut-out milk, milk product or frozen dessert temperatures shown by the indicating thermometer shall be determined daily, and shall be entered upon the recording thermometer chart.

- (3) Switches for the control of pumps, homogenizers, or other devices which produce flow through the holder, shall be wired in such a manner that the circuit is completed only when the milk, milk products or frozen dessert is above the required pasteurization temperature, or when the diversion valve is in the fully-diverted position.
- (4) The flow-diversion valve shall be located downstream from the holder. The holder shall be so designed that no portion between the inlet and the flow-stop is heated. The flow-stop-controller bulb shall be located in the holding tube not more than eighteen (18) inches upstream from the flow-diversion valve.
- (5) The pipe line from the diversion port of the flow-diversion valve shall be self-draining, and shall be free of restrictions or valves, unless such restrictions or valves are so designed that stoppage of the diversion line can not occur.
- (6) The holder shall be so designed that the simultaneous temperature difference between the hottest and

coldest milk in any cross-section of flow at any time during the holding period will not be greater than 1°F.

- (7) Indicating and Recording Thermometers - Location and Required Readings - An indicating thermometer shall be located as near as practicable to the bulb of the recorder controller, but may be located a short distance upstream from the latter where milk between the two bulbs does not differ significantly in temperature. The temperature shown by the recording thermometer shall be checked daily against the temperature shown by the indicating thermometer, and the readings shall be recorded on the chart. The recording thermometer shall be kept so adjusted as never to read higher than the indicating thermometer.
- (8) The holders shall be so designed as to provide for the holding of every particle of milk, milk product or frozen dessert for the required pasteurization time. Tubular holders shall slope, not less than $\frac{1}{4}$ -inch per foot, continuously upward from the inlet to the milk-flow stop.
- (9) The pump, or pumps, and other equipment which may produce flow through the holder shall be located upstream from the holder. Pumps, homogenizers, or other flow-producing devices may be located downstream from the holder when the milk is open to the atmosphere between the holder and the inlet to such equipment.

- (10) The pump, or pumps, governing the rate of flow through the holder shall be driven by a motor whose maximum attainable speed is such as to insure the holding of every particle of milk for the required pasteurization time. The motor may be either a constant-speed induction-type motor or, in lieu thereof, any other type of motor which is so connected with a governor as to limit its maximum speed so as to insure the required holding time, provided that the setting of the governor is sealed so that it can not be changed without detection by the Department. In all cases, the motor shall be connected to the timing pump by means of a common driveshaft, or by means of gears, pulleys, or a variable-speed drive, with the gear box, the pulley box, or the setting of the variable-speed drive protected in such a manner that the holding time can not be changed without detection by the Department. This shall be accomplished by the application of suitable seals after tests by the Department, and such seals shall not be broken without immediately notifying the Department by telephone and confirming this notice by mail within twenty-four (24) hours. If the proper pasteurization time is achieved at the maximum obtainable pump speed, then the speed controls need not be sealed.

Variable-speed drives used in connection with

the timing pump shall be so constructed that wearing or stretching of the belt results in a slow-down, rather than a speed-up, of the pump.

(11) Regenerative heater-coolers shall be so constructed, installed, and operated that the pasteurized milk, milk product or pasteurized frozen dessert side of the heat transfer water will automatically be under greater pressure than the raw milk or raw frozen dessert sides at all times.

(12) Milk-Level Elevations

a. The pasteurized milk or frozen dessert between its outlet from the regenerator and its nearest downstream point open to the atmosphere, shall rise to a higher elevation than any raw milk or raw frozen dessert which is between the raw milk or raw frozen dessert supply tank and the raw milk or raw frozen dessert outlet from the regenerator; and shall open to the atmosphere at said elevation. The excess head shall be at least six (6) percent of the maximum height of the said raw milk or raw frozen dessert above the bottom of the regenerator.

b. The free raw milk or raw frozen dessert level nearest upstream from the regenerator shall be in a supply tank of which the overflow shall be below the level of the lowest milk or frozen dessert passage in the regenerator.

(13) Pump Location

- a. No pump shall be located between the pasteurized milk or pasteurized frozen dessert outlet from the regenerator and the nearest downstream point open to the atmosphere.
- b. No pump shall be located between the raw milk or raw frozen dessert inlet to the regenerator and the raw milk or raw frozen dessert supply tank, unless it is so designed and so installed that it can operate only when milk or frozen dessert is flowing through the pasteurized milk or frozen dessert side of the regenerator, and when the pressure of the pasteurized milk or frozen dessert is higher than the maximum pressure produced by this pump. This may be accomplished by wiring this booster pump so that it can not operate unless (1) the metering pump is in operation, (2) the flow-diversion valve is in the forward-flow position, and (3) a sanitary pressure-switch located at the pasteurized milk or pasteurized frozen dessert outlet from the regenerator is so set and sealed as to complete the circuit only when the pasteurized milk or pasteurized frozen dessert pressure exceeds, by at least

one (1) pound per square inch, the maximum pressure developed by the booster pump.

(14) Maintenance of pressure differential during shut-down and at beginning of run.

a. All raw milk or frozen dessert in the regenerator shall drain freely back to the upstream supply tank when the raw milk or frozen dessert pumps are shut down and the raw milk or frozen dessert line is disconnected from the regenerator outlet.

C. All recording-thermometer charts shall be preserved for a period of six (6) months. No chart shall be used more than one (1) day. The following information shall be entered on the charts:

(1) Manual-Discharge 30-Minute Vat Pasteurizers

a. Date

b. Number or location of recorder, when more than one is used.

c. Extent of holding period.

d. Reading of indicating thermometer at some time during the holding period as indicated on the chart. This shall be done at least once daily.

e. Type of pasteurized milk or milk product or frozen dessert represented by each batch of run shown on the chart.

f. Record of any unusual occurrences.

g. Signature, or initials, of operator.

- (2) High-Temperature Short-Time Pasteurizers
- Recording thermometer charts shall contain all the information specified in C (1) above and the following additional information:
- a. A record of the time during which the milk-flow stop is in the forward-flow position.
 - b. The milk or mix temperatures (determined daily) at which the cut-in and cut-out functions.

XVI. COOLING

All milk, milk products, or frozen desserts received for pasteurization shall be cooled immediately in approved equipment to 50°F. or less, and shall be maintained at that temperature until pasteurized. All pasteurized milk, milk products, or frozen desserts except those to be cultured, shall be cooled immediately after pasteurization in approved equipment to a temperature of 45°F. or less and maintained at that temperature in the plant. The pasteurized milk or milk products shall be maintained at 50°F. or less in transit to and until delivery to the consumer.

Milk for pasteurization, unless delivered to a milk plant within two (2) hours after completion of milking, shall be cooled immediately to 50°F. or less and shall be maintained at that temperature until delivered to a milk plant.

Each refrigerator room in which milk, milk products or frozen desserts are stored shall be equipped with an approved thermometer located in the warmest zone.

Recirculated water and liquid refrigerant which are used in coolers and regenerators shall be properly protected against contamination. All open-surface coolers and open-surface regenerative coolers shall be provided with tight-fitting shields that protect the milk, milk products or frozen desserts from possible contamination by flies, dust, drip, splash, condensation, manual contact, and droplets from coughs and sneezes.

XVII. BOTTLING, CAPPING AND PACKAGING

(A) Bottling and packaging of milk and milk products shall be done at the place of pasteurization in approved mechanical equipment. The filler pipe for bulk containers shall be equipped with a condensation-diverting apron.

Bottling or packaging machine supply tanks and bowls shall be provided with covers which are so constructed as to prevent any contamination from reaching the inside of the filler tank or bowl. All covers must be in place during operation.

Drip-deflecting aprons shall be installed on each filler valve just above the filler-valve rubber, and shall be so designed and so adjusted as to divert condensation from the path of the bottles.

Filling cylinders on packaging machines shall be protected from contamination by the use of overhead shields.

Automatically-operated bottling and packaging machine infeed conveyors shall be provided with overhead shields to protect the bottles or packages from contamination.

Fabricating materials, such as paper stock, foil, wax,

plastic coating, etc., shall be handled in a sanitary manner, and shall be protected against undue exposure during the assembly operation.

Closing of milk and milk products containers shall be done in a sanitary manner by approved mechanical equipment. Hand-closing is prohibited, except that bulk milk containers may be closed in a manner approved by the Department. The cap, or cover, shall protect the pouring lip to at least its largest diameter.

Sour cream, cottage cheese, and other cheeses as defined under Section I - P may be packaged by hand, under conditions approved by the Department, and when the hands of all employees engaged in packaging are thoroughly washed and given bactericidal treatment with an approved sanitizer before beginning such work and after each interruption.

Bottles or packages which have been imperfectly capped or closed shall be emptied into cans or other containers, and the dumped milk or milk products shall be repasteurized.

Bulk dispensing devices shall be filled at the milk plant and shall be sealed with two (2) seals in such manner as to make it impossible to withdraw any part of its contents without breaking one seal, and impossible to introduce any substance without breaking the other.

(B) Packaging, cutting, molding, dipping, and other preparation of frozen desserts or their ingredients shall be done in a sanitary manner. Containers shall be covered immediately after filling. Caps or covers shall be handled in such a manner as to prevent contamination of the package contents.

Single-service sticks, spoons, and containers shall be handled or assembled in a sanitary manner.

XVIII. PERSONNEL HEALTH AND CLEANLINESS

All employees shall wear clean outer garments and shall keep their hands clean at all times while engaged in handling milk, frozen desserts or milk products, containers, utensils or equipment, and shall wear a suitable head covering. Employees shall not expectorate or use tobacco in rooms in which milk, frozen desserts, or milk products are handled.

No person who is affected with any infection or disease in a communicable form or is a carrier of such an infection or disease shall work in a milk, milk products, or frozen dessert plants, and no plant shall employ any such person or any person suspected of being affected with an infection or disease in a communicable form or of being a carrier of such disease. If the plant has reason to believe that any employee has contracted any infection or disease, it shall notify the Department of Public Health immediately by telephone and confirm this notice by mail within twenty-four (24) hours. In the case of a communicable disease in the home of an employee, the employee shall notify the plant of such communicable disease.

All employees currently employed by a milk or frozen desserts plant and each person about to be employed by a milk or frozen desserts plant, whose work will bring him into contact with the processing, handling, storage, or transportation of milk, milk products, frozen desserts, containers and equipment; shall be required to undergo an examination by a physician. This examination shall include a careful morbidity history and the submission of a fecal

sample to the Laboratory Section, Division of Preventive Medicine of the Department. An annual chest x-ray examination and certificate thereof approved by the Department shall be required. Employees shall be barred from employment if warranted by the results of such examinations for such periods of time as may be determined by the Department.

All employees shall furnish such information, submit to such physical examinations, and submit such laboratory specimens as the Department may require for the purpose of determining freedom from communicable disease.

No person with an infected cut or lesion on hands or arms shall handle milk, milk products, frozen desserts, containers or equipment.

XIX. VEHICLES

(A) All vehicles used for the transportation of milk, milk products, or frozen desserts shall be constructed and operated so as to protect their contents from contamination. All vehicles used for the distribution of milk or milk products shall have the name of the distributor prominently displayed thereon.

(B) Milk tank-cars and tank-trucks shall comply with the construction, cleaning, bactericidal treatment, storage, and handling requirements of this regulation.

(1) All vehicles used for the transportation of milk or milk products or frozen desserts in their final-delivery containers shall be constructed with permanent tops and sides.

(2) All vehicles shall be kept clean

- (3) No material which is capable of contaminating milk, milk products or frozen desserts shall be transported in vehicles used for the transport of milk, milk products or frozen desserts.
- (4) Milk tank-cars and tank-trucks, shall be operated in the following manner:
 - (a) Milk, milk products or frozen desserts shall be conducted to and from tanks only through sanitary piping, or approved flexible piping with readily demountable clamps. Such piping shall be capped when not in use.
 - (b) Inlets and outlets of transportation tanks shall be provided with tight-fitting dust caps or covers.
 - (c) Facilities shall be provided for adequate washing and bactericidal treatment of tanks, piping, and accessories, at all plants receiving or shipping milk, milk products or frozen dessert in tanks.
 - (d) Transportation tanks, piping, connections and pumps used with tanks shall be cleaned at the plant immediately after being used and shall be given bactericidal treatment at the plant before reuse.

XX. MISCELLANEOUS PROTECTION

(A) The various milk plant or frozen dessert plant operations shall be located and conducted so as to prevent any contamination of the milk or frozen dessert or of cleaned equipment. All

necessary means shall be used for the elimination of flies, other insects, and rodents. In a milk plant there shall be separate completely partitioned rooms for (1) the pasteurizing, processing, cooling and bottling operations, and (2) the washing and bactericidal treatment of containers. Cans of raw milk shall not be received directly into the pasteurizing room. Rooms in which milk, milk products, or frozen desserts, clean utensils, or containers are handled or stored shall not open directly into any stable or living quarters. The milk and frozen dessert plant containers, utensils, and equipment shall be used for no purpose other than the processing of milk, milk products or frozen desserts and the operations incident thereto, except as may be approved by the Department.

Bulk milk cans such as producer cans and dispenser cans, shall be thoroughly cleaned and sanitized in approved mechanical equipment and stored in a sanitary manner subsequent to being filled or before being returned to a producer by a milk plant.

(B) All equipment and containers with which milk comes into contact shall be covered, or otherwise protected, to prevent the access of flies, dust, condensation, and other contamination during operation.

(C) Ingredients added to milk and milk products, and frozen desserts shall be handled in such manner as to avoid contamination.

(D) All openings in covers of tanks, vats, separators, etc., shall be protected by raised edges, or otherwise, to prevent the entrance of surface drainage. Condensation-diverting aprons shall be provided as close to the tank or vat as possible on all pipes, thermometers, and other equipment extending into a milk or frozen dessert handling tank, bowl, or vat, unless a watertight joint is

provided.

(E) Pasteurized milk shall not be strained or filtered except through a perforated metal strainer or single service filters. Milk shall not be strained through woven-wire cloth.

(F) All food substances used in the preparation of milk products or frozen desserts shall be stored in a clean place, six (6) inches off the floor, and shall be so handled as to be protected from contamination.

(G) No insecticides or other poisonous or deleterious substance shall be stored in any room where milk, milk products, or frozen desserts or their ingredients are handled. All insecticides and similar materials shall be kept in properly labeled containers and shall be so employed as not to create a public health hazard.

(H) Lubricants such as orange oil or petroleum jelly applied to equipment shall be dispensed in a sanitary manner from the original container.

(I) All milk, milk products or frozen desserts that have spilled, overflowed, or leaked shall be discarded and shall not be sold for human consumption.

(J) The surrounding outer premises appertaining to the plant shall be kept clean and free of litter and rubbish, and from all other conditions that may serve as rodent harborages or to attract flies and other arthropods.

(K) Facilities shall be supplied for the storing and hanging of employees' clothing and such facilities shall be kept clean. These shall be separated from rooms where milk, milk products or frozen desserts are handled. Soiled coats and aprons shall be kept

in containers provided for that purpose.

(L) Frozen desserts in broken or open containers may be returned to the plant after delivery for inspection, but shall not be used for human consumption.

XXI. PLANS FOR NEW CONSTRUCTION OR EXTENSIVE RECONSTRUCTION

In the case of new construction or extensive reconstruction or alterations or the installation of new equipment, duplicate plans shall be submitted to the Department of Public Health for prior approval. Such approvals shall be recorded and a set of plans will be kept on file in the offices of the Department of Public Health.

XXII. STANDARDS FOR MILK, MILK PRODUCTS AND FROZEN DESSERTS

(A) Bacterial plate counts, direct microscopic counts, coliform determinations, phosphatase tests, efficiency of bactericidal treatment, and other laboratory and screening tests shall conform to the procedures in the latest edition of "Standard Methods for the Examination of Dairy Products" recommended by the American Public Health Association. Examinations may include such other chemical and physical determinations as the Department may deem necessary for the detection of adulteration. Bio-assays of the vitamin D content of vitamin D milk and milk products shall conform to the 8th edition of the "Official Methods of Analysis of the Association of Official Agricultural Chemists".

(B) No milk or milk products shall be received in any milk plant for any purpose, unless such milk or milk products shall have been produced on approved dairy farms, or acquired from approved milk plants.

(C) All milk, milk products, or frozen desserts and ingredients used therein shall be clean, wholesome, unadulterated, free from spoilage, hazardous chemicals, rodents, insects and insect parts, other arthropods or other foreign materials.

(D) Bacteriological Standards

(1) Milk and milk products shall not exceed the following bacteriological standards. These standards shall not apply to cultured milk and milk products.

- a. Raw milk at the point of receipt from the farm shall not exceed a bacterial plate count of 200,000 per ml., and at no subsequent time prior to pasteurization shall exceed a bacterial plate count of 400,000 per ml. as determined by the logarithmic average of the last four samples.
- b. Pasteurized milk and milk products shall not exceed a bacterial plate count of 30,000 per ml. as determined by the logarithmic average of the last four samples; and shall not exceed a coliform count of 5 per ml. as computed from the lowest three of the last four samples.
- c. Pasteurized cream shall not exceed a bacterial plate count of 30,000 per gram as determined by the logarithmic average of the last four samples; and shall not exceed a coliform count of 5 per gram as computed from the lowest three of the last four samples.
- d. Milk labeled as Pasteurized A Milk shall conform to the Pennsylvania Department of Agri-

culture Regulations Governing Pasteurized A
Milk, and to the regulations of the Department.

- (2) Frozen desserts shall not exceed the following bacterial plate counts per gram.
 - a. Frozen desserts for pasteurization shall not exceed a bacterial plate count of 200,000 per gram as determined by the logarithmic average of the last four samples.
 - b. Pasteurized frozen desserts shall not exceed a bacterial plate count of 50,000 per gram as determined by the logarithmic average of the last four samples.
 - c. Pasteurized frozen dessert mix shall not exceed a coliform count of 10 per gram as computed from the lowest three of the last four samples.
- (3) Containers for milk, milk products and frozen desserts shall not exceed the following bacteriological standards
 - a. Bottles and single-service containers, prior to use, shall not exceed a bacterial plate count of one hundred per quart capacity as computed from the lowest three of the last four samples.
 - b. Cans, prior to use, shall not exceed a bacterial count of one per square centimeter of surface area of the can as computed from the lowest three of the last four samples.
 - c. Bacteriological standards
 - (1) Milk and milk products shall not exceed the following bacteriological standards. These standards shall not apply to cultured milk and

milk products.

(E) Chemical Standards

Milk shall contain not less than $8\frac{1}{4}$ percent milk solids-net fat and not less than $3\frac{1}{4}$ percent milkfat.

XXIII. SAMPLING

(A) Bacteriological samples of pasteurized milk and milk products shall be submitted weekly by the plant to a laboratory approved by the Department as employing methods which are in accordance with the Standard Methods recommended by the American Public Health Association. The results of these samples shall be kept on file at the plant for one (1) year, and shall be available for inspection by the Department.

(B) Bacteriological samples of pasteurized frozen desserts shall be submitted monthly as specified in XXIII (A).

(C) Phosphatase tests shall be performed weekly on each type of packaged milk or milk products. The results of these tests shall be kept on file at the plant for one (1) year and shall be available for inspection by the Department. In case of a positive phosphatase test, the cause shall be determined and corrected before the milk, milk products, or frozen desserts can be sold as pasteurized milk, milk products or frozen desserts.

(D) Bio-assays of the vitamin D content of a vitamin D milk and a vitamin D skim milk shall be made at least once every three (3) months in a laboratory approved by the Department for such examinations. Reports of these bio-assays shall be sent to the Department. Repeat samples and tests shall be made if the bio-assay of any sample is less than 400 U.S.P. units per quart.