3-A SANITARY STANDARDS FOR MANUALLY OPERATED BULK MILK AND MILK PRODUCTS DISPENSERS, MULTI-SERVICE MILK CONTAINERS, AND DISPENSING MECHANISMS

Formulated by
International Association of Milk and Food Sanitarians, Inc.
United States Public Health Service
The Dairy Industry Committee

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It is the purpose of the IAMFS, USPHS, and DIC in connection with the development of 3-A Sanitary Standards, to allow and encourage full freedom for inventive genius of new developments. Bulk milk and milk products dispensers, multi-service milk containers, and dispensing mechanisms which are developed, which so differ in technique, design, material and construction, otherwise, as not to conform to the following standards but which are, in the opinion of the manufacturer or fabricator equivalent or better, may be submitted at any time for the consideration of IAMFS, USPHS, and DIC.

DEFINITION

For the purpose of this sanitary standard, a manually operated bulk milk and milk products dispenser consists of a refrigerated cabinet, multiservice milk container(s), and a dispensing mechanism(s), which are designed to dispense individual servings of homogenized milk or milk products in a sanitary manner.

A. MATERIAL

(1) *Cabinet and Appurtenances*:

All interior and exterior surfaces of the cabinet and all exposed surfaces of appurtenances shall be of durable non-absorbent, corrosion-resistant material. All internal and external surfaces of the cabinet shall be at least as smooth as a No. 2-B mill finish on stainless steel.

The dispensing mechanism with the exception of the dispenser tube shall be made of a corrosion-resistant material or provided with a corrosion-resistant finish.

(2) *Multiple-Use Product Contact Surfaces*:

Multi-service cans and covers shall be of hot-dipped tinned steel, 18-8 stainless steel, or equally corrosion-resistant material that is non-toxic and non-absorbent, the product contact surfaces of which shall be at least as smooth as a No. 4 mill finish or 120 grit finish properly applied.

Multi-use dispenser tubes, when used, shall be made of 18-8 stainless steel or of equally corrosion-resistant material.

(3) *Single-Use Product Contact Surfaces*:

Single service parts having product contact surfaces shall consist of material which is non-toxic, commercially stable, non-absorbent and shall not impart off-flavors.

B. FABRICATION

(1) *Cabinet and Appurtenances*:

All interior seams or permanent joints of the cabinet shall be moisture tight. All exterior seams or permanent joints of the cabinet shall be sealed against moisture. The finish of welds shall be not less than that of the adjoining material.

All interior angles of junctions of floor and walls shall have radii of not less than ¼-inch.

The dispenser cabinet shall be supported by smooth legs with rounded bottoms which will give a minimum of 3-inch clearance space between the bottom of the dispenser and the surface on which the dispenser is mounted. The area around the legs shall be readily accessible for cleaning. If the legs are of hollow tube stock, they shall be effectively sealed. Legs shall have no internal angles.

The dispenser cabinet shall be provided with adequate mechanical refrigeration and suitable automatic controls capable of maintaining the temperature of the cabinet at not more than 40°F. when testing at 110°F. ambient temperature.

Milk in the dispensing tube shall be maintainable at not more than 50°F. when controls are set for maximum temperature of 40°F. under test conditions prescribed above.

The refrigeration breaker strip, if used, shall be sealed or gasketed against the entrance of moisture behind it. Exposed surfaces of refrigeration breaker strip shall have no internal angles.

Insulation shall be installed in such manner that occurrence of voids between parts of the insulation will be prevented.

Access to cabinet interiors for inspection purposes shall be possible without adjusting the dispensing mechanism.

Door(s) shall be of the type which can be opened without being removed and shall be provided with a rubber or rubber-like gasket around the inside. The door gasket shall be sealed in place against the entrance of moisture behind it or shall be removable without tools. Removable door gaskets shall have no internal angles. Hollow gaskets shall be sealed against the entrance of moisture into the internal cavity. Exposed surfaces of gaskets shall have no internal angles.

When the door or doors are in the fully opened position with all removable parts removed, all surfaces within the refrigerated portion of the cabinet shall be accessible for cleaning and visual inspection.

The refrigeration unit shall be readily accessible for cleaning and shall be effectively screened against insects. Such screens or their equivalent shall be constructed of corrosion-resistant material with openings not over 3/32-inch in diameter or slots not over 3/32-inch wide. They shall be located and mounted so as to be readily cleanable and shall be tight fitting.

Knurled surfaces shall not be used.

All appurtenances within the refrigerated portion of the cabinet, which are directly related to the dispensing operation, shall be removable without the use of tools and when removed shall be disassemblable without the use of tools. When disassembled, all surfaces of such appurtenances shall be visible and accessible for cleaning.

All seams or permanent joints of appurtenances shall be welded or sealed with durable, non-absorbent, corrosion-resistant material and shall be smooth and flush.

(2) *Multiple-Use Product Contact Surfaces*:

Cans shall have a minimum neck diameter of 7-inches and shall be of the seamless or solderless type, stainless steel cans may be welded. The covers shall be of the umbrella type fitted with a standard vent hole and with two holes in the rim for sealing wires. The can shall be provided with means for sealing of all openings so that the product can not be withdrawn or any substance added to the contents without breaking or defacing the seals on the cover or the emptying device. The can shall be fitted with two lugs at 180° spacing to permit the sealing of the covers to the can.

Cans supplied with single service non-metallic dispensing tubing shall be provided with positive means of positioning or holding the tube during filling, storage, and transportation to protect the covering material from damage.

All surfaces of attachments to the product container, with which the milk comes in contact, shall be visible and accessible. Permanent attachments shall be welded or brazed to the container with durable, corrosion-resistant, non-toxic material. All joints shall be smooth and flush.

Any permanently attached container outlet tube shall be of uniform straight bore and the interior and exterior surfaces of the tube shall be visible when viewed from outside the container.

There shall be no exposed threads in the milk zone.

(3) *Dispensing Tubes and Dispensing Devices and Mechanisms*:

Single service, non-metal dispensing tubes for use without bactericidal treatment at the milk plant shall be clean and shall (1) be given bactericidal treatment at the tube fabricating plant so that they shall not have more than one colony per ml of capacity in 3 out of 4 samples examined by the rinse method described in "Standard Methods for the Examination of Dairy Products"; (2) be individually packaged in a moisture-proof non-toxic material either prior to bactericidal treatment or after such treatment by methods and in materials which preclude recontamination; (3) be capable of being applied to the container without recontamination of product contact surfaces and (4) be closed or sealed at the dispensing end, so as to make the tube's re-use impracticable.

Single service dispensing tubes shall be of predetermined length. The length of the tube shall be such that the operator may put it in operation without cutting or by cutting only at a point not over ¼-inch beyond the termination of the dispensing mechanism.

A moisture-tight compartment or covering shall be provided for the protection of the entire dispensing tube when attached to the container. If the tube is not provided with a moisture-proof covering it shall be housed in a compartment having a moisture-tight closure which is removable after the container is placed in the cabinet. Such compartment closure shall be so made that it cannot be re-used or returned to its original condition after removal, or a multiple use moisture-tight closure that is tamper-proof may be used. The tube covering shall be removable after the container is placed in the cabinet and shall be so made that it cannot be re-used or returned to its original condition after removal. The discharge opening of the dispensing tube shall be provided with a moisture-tight single-use closure or plug and a single-use covering which is removable after

the dispensing tube is placed in the operating position.

The dispensing mechanism, whether attached to the cabinet or located in or attached to the product container, shall be so fabricated as to be easily disassembled without the use of tools. When disassembled, all surfaces shall be visible and accessible for cleaning.

The dispensing mechanism shall be so designed as to divert condensation or other moisture away from the normal filling position of the service container. If a removable drain guard is used, it shall be so designed that milk can not be dispensed unless such guard is in position.

Permanent drains, if used, shall not terminate within or beneath the cabinet.

APPENDIX

The following is not a part of this standard but is suggested to safeguard the quality of the milk or milk products delivered from these bulk milk dispensers and to facilitate standardization of operation.

A. WASHING AND BACTERICIDAL TREATMENT OF CANS

Bulk milk dispenser cans should be effectively washed and given bactericidal treatment by means of a milk can washer at the dairy processing plant where they are filled. The washing and bactericidal treatment of these cans should produce cans which should have residual bacterial plate count of not more than 1 per ml of capacity as determined in accordance with the procedures contained in "Standard Methods for Examination of Dairy Products" published by the American Public Health Association.

Where difficulty is encountered in producing clean cans which meet the above maximum residual bacterial plate count, the cans and covers should be given supplementary cleaning by manual methods or by the use of a brush-type can scrubber, and should be given supplementary bactericidal treatment by a steam jet or by immersion for two minutes in bactericidal solution.

B. METHOD OF FILLING

Bulk milk dispenser cans should be filled on a filling machine of a type that protects the top of the can effectively during the filling operation. The can should be covered immediately after filling with a single service parchment paper (having a vent opening) and the can cover sealed into place with wire seals at two points at 180° spacing.

C. REFRIGERATION

Adequate refrigeration should be provided so that the milk temperature does not exceed 50°F. at any time between filling and placing of the bulk milk dispenser cans in the dispenser cabinet.

D. MINIMUM INTERIOR DIMENSIONS OF CABINETS

(1) *For 12 and 20-quart cans*: Height, 21¼″; Depth, 11″; Width, 11″ and/or multiples of 11″ for multiple-can cabinets.

(2) *For 40-quart cans*: Height, 25¾″; Depth, 14½″; Width, 14½″ and/or multiples of 14½″ for multiple-can cabinets.

E. PROTECTION OF CLEAN CANS

After bactericidal treatment all cans and covers should be protected from contamination during transportation and storage.

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