

3-A[®] Sanitary Standards for In-Line Strainers for Milk and Milk Products, Number 42-01

Formulated by
International Association of Food Industry Suppliers (IAFIS)
International Association for Food Protection (IAFP)
United States Public Health Service (USPHS)
The Dairy Industry Committee (DIC)

It is the purpose of the IAFIS, IAFP, USPHS, and DIC in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. In-line milk and milk product strainers specifications heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAFIS, IAFP, USPHS, and DIC at any time. **NOTE:** Use current revisions or editions of all referenced documents cited herein. Standard English is the official language of 3-A Sanitary Standards and 3-A Accepted Practices.

A SCOPE

A1 These standards cover the sanitary aspects of in-line strainers for milk and milk products.

Straining devices which employ mechanical action are *not* covered by this standard.

A2 In order to conform with these 3-A Sanitary Standards, in-line strainers shall comply with the following design, material, and fabrication criteria.

B DEFINITIONS

B1 *Product:* Shall mean milk and milk product.

B2 *Strainers:* Shall mean equipment having one or more barrier elements with defined openings to separate and retain particulate material from liquid product streams.

B3 *Barrier:* Shall mean element or elements with defined openings to allow flow of liquid products while preventing the passage of particulate materials. Openings may be, but are not limited to, round holes, or slots or openings created by weldments of solid V-shaped profile wire. Woven wire is not permitted.

B4 *Product Contact Surface:* Shall mean all surfaces that are exposed to the product, or from which liquid may drain, drop, or be drawn into the product.

B5 *Nonproduct Contact Surface:* Shall mean all other exposed surfaces.

B6 *Manual (COP) Cleaning:* Shall mean soil removal

when the equipment is partially or totally disassembled. Soil removal is effected with chemical solutions and water rinses with the assistance of one or a combination of brushes, nonmetallic scouring pads and scrapers, high or low pressure hoses and tank(s) which may be fitted with recirculating pump(s), and with all cleaning aids manipulated by hand.

B7 *Easily or Readily Removable:* Shall mean quickly separated from the equipment with the use of simple hand tools if necessary.

B8 *Easily or Readily Accessible:* Shall mean a location which can be safely reached by an employee from the floor, platform, or other permanent work area.

B9 *Inspectable:* Shall mean all product contact surfaces can be made available for close visual observation.

B10 *Simple Hand Tools:* Shall mean implements normally used by operating and cleaning personnel such as a screwdriver, wrench, or mallet.

C MATERIALS

C1 Product contact surfaces shall be of stainless steel of the American Iron and Steel Institute (AISI) 300 Series¹ or corresponding Alloy Cast Institute (ACI)

¹The data for this series are contained in the *AISI Steel Products Manual, Stainless & Heat Resisting Steels*, November 1990, Table 2-1, pp. 17-20. Available from the American Iron and Steel Society, 186 Thorn Hill Road, Warrendale, PA 15086 (724) 776-1535.

types² (See Appendix, Section E), or metal which under conditions of intended use is at least as corrosion-resistant as stainless steel of the foregoing types, and is nontoxic and nonabsorbent, except that:

C1.1 Rubber and rubber-like materials may be used for gaskets, sealing applications, and parts having the same functional purposes.

C1.2 Rubber and rubber-like materials when used for the above specified applications shall comply with the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment, Number 18-.

C1.3 Plastic materials may be used for gaskets, sealing applications, and parts having the same functional purposes.

C1.4 Plastic materials when used for the above specified applications shall comply with the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20-.

C1.5 Rubber and rubber-like materials and plastic materials having product contact surfaces shall be of such composition as to retain their surface and conformation characteristics when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment.

C1.6 The final bond and residual adhesive, if used, of bonded rubber and rubber-like materials and bonded plastic materials shall be nontoxic.

C2 Nonproduct contact surfaces shall be of corrosion-resistant material, relatively nonabsorbent, durable, and cleanable.

D FABRICATION

D1 All product contact surfaces shall have a finish at least as smooth as a No. 4 ground finish on stainless steel sheets and be free of imperfections such as pits, folds, and crevices in the final fabricated form. (See Appendix, Section F.)

D2 Permanent joints in metallic product contact surfaces shall be continuously welded. Welded areas on product contact surfaces shall be at least as smooth as a No. 4 ground finish on stainless steel sheets free of imperfections such as pits, folds, and crevices.

D3 Product contact surfaces shall be easily accessible for cleaning and inspection. Removable parts shall be readily demountable.

D4 Product contact surfaces shall be self-draining except for normal clingage or shall be readily drainable.

D5 Pipeline connections shall conform to 3-A Sanitary Standards for Sanitary Fittings for Milk and Milk Products, Number 63-.

D6 Gaskets having a product contact surface shall be removable or permanently bonded to the surface in such a manner that the bond is continuous and mechanically sound so that in the environment of its intended use the gasket does not separate from the surface to which it is bonded.

D7 Gasket retaining grooves in product contact surfaces shall be no deeper than their width and shall not exceed 1/4 in. (6.35 mm) in depth or be less than 1/4 in. (6.35 mm) wide.

D8 Internal angles of less than 135° on product contact surfaces shall have radii of not less than 1/16 in. (1.59 mm), except those internal angles of weldments on solid V-shaped profile wire, and those provided for in Section D5.

D9 There shall be no threads on product contact surfaces.

D10 Any coil spring having product contact surfaces shall have at least 3/32 in. (2.38 mm) openings between coils including the ends when the spring is in the free position.

D11 Round holes in the barrier or barrier elements shall not be less than 1/32 in. (0.794 mm) in diameter, except that if square or rectangular, the least dimension shall be no less than 0.020 in. (0.51 mm) with corner radii of no less than 0.0050 in. (0.13 mm). In the case of solid V-shaped profile wire, the space between the wires shall be at least 0.0050 in. (0.13 mm) and the space between the wire supports shall be no more than 1/2 in. (12.7 mm). All openings shall be accessible for cleaning and free of burrs.

D12 Strainers which use solid V-shaped profile wire shall

²Steel Founders Society of America, Cast Metal Federation Building, 455 State Street, Des Plaines, IL 60016 (708) 299-9160.