

3-A[®] Sanitary Standards for Plastic Plug-Type Valves for Milk and Milk Products, Number 52-02

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. Plastic plug-type valves 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. The 3-A Sanitary Standards and 3-A Accepted Practices provide hygienic criteria applicable to equipment and systems used to produce, process, and package milk, milk products, and other perishable foods or comestible products. Standard English is the official language of 3-A Sanitary Standards and 3-A Accepted Practices.

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| <p>A SCOPE</p> <p>A1 These standards cover the sanitary aspects of plastic plug-type valves used on processing equipment for milk or milk products and on equipment and pipelines which hold or convey milk or milk products.</p> <p>A2 In order to conform with these 3-A Sanitary Standards, plastic plug-type valves shall comply with the following design, material, and fabrication criteria and the applicable documents referenced herein.¹</p> <p>B DEFINITIONS</p> <p>B1 <i>Product:</i> Shall mean milk and milk products.</p> <p>B2 <i>Plug-Type Valve:</i> Shall mean a two-ported or three-ported valve consisting of a plug with either two or three passageways that is rotated inside a body with either two or three ports to stop, direct or throttle flow.</p> <p>B3 Surfaces</p> <p>B3.1 <i>Product Contact Surfaces:</i> Shall mean all surfaces which are exposed to the product and surfaces from which liquids may drain, drop, diffuse, or be drawn into the product.</p> | <p>B3.2 <i>Nonproduct Contact Surfaces:</i> Shall mean all other exposed surfaces.</p> <p>B4 Cleaning</p> <p>B4.1 <i>Manual (COP) Cleaning:</i> 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.</p> <p>C MATERIALS</p> <p>C1 Nonmetals</p> <p>C1.1 Product contact surfaces shall be of plastic material conforming 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-, and shall be of such composition to retain their surface and conformation characteristics when exposed to conditions encountered in the environment of intended use and in cleaning and bactericidal treatment except that.</p> <p>C1.1.1 Rubber and rubber-like materials may be used for O-rings and parts having the same functional purposes.</p> |
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¹ Use current revisions or editions of all referenced documents cited herein.

C1.1.1.1 Rubber and rubber-like materials, when used for the above specified application(s), shall conform 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-.

C2 Nonproduct Contact Surfaces

C2.1 All nonproduct contact surfaces shall be of corrosion-resistant material or material that is rendered corrosion resistant. If coated, the coating used shall adhere. All nonproduct contact surfaces shall be relatively nonabsorbent, durable, and cleanable. Parts removable for cleaning having both product contact and nonproduct contact surfaces shall not be painted.

D FABRICATION

D1 Surface Texture

D1.1 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 E.)

D2 Cleaning and Inspectibility

D2.1 Product contact surfaces shall be easily accessible for manual cleaning and inspection either when in an assembled position or when removed. Removable parts shall be readily demountable.

D3 Inlet and Outlet Connections

D3.1 All sanitary inlet and outlet connections shall conform with those applicable fabrication provisions of 3-A Sanitary Standards for Sanitary Fittings for Milk and Milk Products, Number 63-.

D4 Mating Surfaces

D4.1 The mating surfaces between the valve plug and the valve body shall be continuously tapered.

D5 Draining

D5.1 Product contact surfaces shall be self-draining when properly installed.

D6 Radii

D6.1 All internal angles of less than 135° on product contact surfaces shall have radii of not less than 1/8 in. (3.18 mm), except that:

D6.1.1 Smaller radii may be used when they are required for essential functional reasons, such as those in O-ring grooves. In no case shall such radii be less than 1/32 in. (0.794 mm).

D6.2 The radii in grooves for standard 1/4 in. (6.35 mm) O-rings shall not be less than 3/32 in. (2.381 mm) and for standard 1/8 in. (3.18 mm) O-rings shall not be less than 1/32 in. (0.794 mm).

D7 Threads

D7.1 There shall be no threads in contact with the product.

D8 Nonproduct Contact Surfaces

D8.1 Nonproduct contact surfaces shall have a smooth finish, free of pockets and crevices, and be readily cleanable. Those surfaces to be coated shall be effectively prepared for coating.

D9 Powered Valve Actuators

D9.1 Valves with powered actuators shall have an open space of at least 1 in. (25.4 mm), clear for inspection, between the actuator and the valve.

D9.2 Powered actuators shall be readily demountable from the valve and stem.