

QUESTIONS AND ANSWERS ABOUT 3-A SANITARY STANDARDS FOR DAIRY EQUIPMENT

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Q. *What is a 3-A Sanitary Standard?*

A. A 3-A Sanitary Standard for Dairy Equipment is a voluntary standard, developed by conferees representing sanitarians, equipment fabricators, dairy processors, and the U. S. Public Health Service. It covers features of sanitary design for an indicated item of machinery or process.

Q. *Why is it called "3-A"?*

A. 3-A stands for *three associations*. In the 1920's, two trade associations and one professional association formulated uniform standards for fittings used on milk pipe lines. The trade groups are now known as Milk Industry Foundation and Dairy and Food Industries Supply Association; the professional group is now known as International Association of Milk, Food and Environmental Sanitarians. The standards for fittings evolved in those early days became popularly known as "3-A" standards. Since 1944, every major dairy processing group, suppliers and equippers, and the U. S. Public Health Service have taken part . . . but the results are still referred to as 3-A *Sanitary Standards*.

Q. *Who develops a 3-A Sanitary Standard?*

A. Standards are formulated by the 3-A Sanitary Standards Committees—which meet together once or twice a year. They are:

1. The Committee on Sanitary Procedure of International Association of Milk, Food and Environmental Sanitarians.
2. The Sanitary Standards Subcommittee of Dairy Industry Committee, representing the following associations of processors—American Butter Institute, American Dry Milk Institute, Evaporated Milk Association, International Association of Ice Cream Manufacturers, Milk Industry Foundation, National Creameries Association and National Cheese Institute—and also representing the association of equippers and suppliers, Dairy and Food Industries Supply Association.
3. Representatives of the Milk and Food Program, Division of Environmental Engineering and Food Protection, B. S. S., U. S. Public Health Service.

Invited to a regular meeting of all the Committees, moreover, are representatives of *all* manufacturers of record (regardless of association affiliation) of equipment of the type or types under consideration there.

Q. *How are 3-A Sanitary Standards formulated?*

A. The primary suggestion for a 3-A Sanitary Standard may come from anyone—public health officials, dairy processors, or equipment manufacturers. The suggestion may be communicated to any of the groups participating in the 3-A program which will pass it on to the Executive Committee of the 3-A Sanitary Standards Committees. If the suggestion is considered by the Executive Committee to have merit and timeliness, it is passed on in due course to the Technical Committee of Dairy and Food Industries Supply Association. The Technical Committee appoints a Task Committee of representatives of all known manufacturers of the equipment involved in the suggestion. The Task Committee develops a tentative draft of a standard which is sent to the appropriate committees and officers of Dairy Industry Committee, International Association of Milk, Food and Environmental Sanitarians, and U. S. Public Health Service. It should be noted that in these and the subsequent stages of the formulation procedure DFISA does not act through, or as a part of, the Sanitary Standards Subcommittee of Dairy Industry Committee but separately as the medium through which the views of the equipment fabricators are presented. The three groups to which the tentative draft of a standard is presented by the DFISA Task Committee suggest changes—often many changes! Sometimes, they even request a complete re-draft of the tentative standard which they have received. Their suggestions and recommendations are returned to the DFISA Task Committee which adopts them or seeks a common ground for further consideration by all the groups of the matters that are involved.

Usually, many re-writings are necessary before a tentative standard is drafted which merits discussion at a meeting of the 3-A Sanitary Standards Committees. Frequently, even after a tentative sanitary standard has progressed that far, it may be sent back to a Task Committee for further

work. If the tentative standard is agreed to by all participating parties at such a meeting then it is formally approved by:

1. The Chairman of the Committee on Sanitary Procedure of International Association of Milk, Food and Environmental Sanitarians;
2. The Chief of the Milk and Food Program, Division of Environmental Engineering and Food Protection Services, B. S. S., U. S. Public Health Service;
3. The Chairman of the Sanitary Standards Subcommittee of Dairy Industry Committee; and
4. The Chairman of the Technical Committee of Dairy and Food Industries Supply Association.

Within a year, the 3-A Sanitary Standard is published in The Journal of Milk and Food Technology, and thousands of reprints are circulated to all persons involved. Additionally, copies of each 3-A Sanitary Standard are maintained on file in the national headquarters of the major trade groups, and are always available to any interested party.

Q. *For what equipment are there currently 3-A Sanitary Standards?*

A. The basic published 3-A Sanitary Standards are listed below. In addition to those listed by serial number, there are innumerable revisions, amendments and supplements not shown here.

Serial No.	Title	Publication Date
0101	3-A Sanitary Standards for Storage Tanks for Milk and Milk Products (Amended)	5/47
0203	3-A Sanitary Standards for Pumps for Milk and Milk Products, Revised	8/63
0300	Sanitary Standards for Weigh Cans and Receiving Tanks for Raw Milk	9/47
0400	Sanitary Standards Covering Homogenizers and High Pressure Pumps of the Plunger Type	1/49
0501	Sanitary Standards for Stainless Steel Automotive Milk Transportation Tanks for Bulk Delivery and/or Farm-Pick-up Service (Amended)	9/54
0700	Sanitary Standards for Seamless and Welded Tin-Coated Can-Type Milk Strainers	1/50
0800	Sanitary Standards for Fittings Used on Milk and Milk Products Equipment and Used on Sanitary Lines Conducting Milk and Milk Products	7/52
0900	Sanitary Standards for Thermometer Fittings and Connections Used on Milk and Milk Products Equipment	3/50
1000	3-A Sanitary Standards for Milk and Milk Products Filters Using Disposable Filter Media	9/50
1100	3-A Sanitary Standards for Plate Type Heat Exchangers for Milk and Milk Products	1/52

1200	3-A Sanitary Standards for Internal Return Tubular Heat Exchangers for Use with Milk and Milk Products	11/52
1301	3-A Sanitary Standards for Farm Milk Cooling and Heating Tanks (Revised)	6/60
1400	3-A Sanitary Standards for Inlet and Outlet Leak Protector Plug Valves for Batch Pasteurizers	1/54
1500	3-A Sanitary Standards for Manually Operated Bulk Milk and Milk Products Dispensers, Multi-Service Milk Containers and Dispensing Mechanisms	9/55
1600	3-A Sanitary Standards for Milk and Milk Products Evaporators and Vacuum Pans	7/57
1700	3-A Sanitary Standards for Fillers and Sealers of Single Service Containers for Milk and Fluid Milk Products	7/62
1800	3-A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment	1/63
1900	3-A Sanitary Standards for Batch and Continuous Freezers for Ice Cream, Ices and Similarly-Frozen Dairy Foods	1/63
2000	3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment	4/64
2200	3-A Sanitary Standards for Silo-Type Storage Tanks for Milk and Milk Products	10/64
2300	3-A Sanitary Standards for Equipment for Packaging Frozen Desserts, Cottage Cheese and Milk Products Similar to Cottage Cheese in Single Service Containers	10/64
2400	3-A Sanitary Standards for Non-Coil Type Batch Pasteurizers	12/64
2500	3-A Sanitary Standards for Non-Coil Type Batch Processors for Milk and Milk Products	12/64
2600	3-A Sanitary Standards for Sifters for Dry Milk and Dry Milk Products	3/65
	3-A Accepted Practices for Permanently Installed Sanitary Product-Pipelines and Cleaning Systems	3/66
	3-A Accepted Practices for Supplying Air Under Pressure in Contact with Milk, Milk Products and Product Contact Surfaces	4/64
	3-A Accepted Practices for the Sanitary Construction, Installation, Testing and Operation of High-Temperature Short-Time Pasteurizers	6/58
	3-A Standard Method for Determining the Holding Time of High-Temperature Short-Time Pasteurizers by Means of the Salt Conductivity Test	9/50

In addition to the foregoing, over a dozen tentative sanitary standards are pending action by the 3-A Committees. Some of these are for new standards, and others provide for amendment, revision, or supplements to published 3-A Standards. The pending projects relate to the following subjects:

- New Tentative Standards*
- Dry Milk Fillers
- Milk Driers
- Butter Equipment
- Vacuum Flavor Chambers

Sterile Milk Processing Systems
Cleanability

Amendment, Revision, or Supplement to:
Sanitary Fittings
C-I-P Pumps
HTST Practices
Air Under Pressure Practices
Farm Tanks
Storage Tanks
Evaporators

Q. *How can a prospective buyer or inspecting sanitarian determine whether a piece of equipment complies with existing 3-A Sanitary Standards?*

A. There are two possible ways: (a) the buyer or sanitarian can look for a 3-A Symbol, which may be affixed by the manufacturer to equipment now covered by existing standards, provided the manufacturer has received authorization from the 3-A Sanitary Standards Symbol Administrative Council; or (b) if the symbol is not readily discovered he can inquire of the equipment manufacturer whether the equipment does comply with the existing pertinent 3-A standard, and he can obtain copies of the relevant standard or standards against which to carefully check the equipment himself.

Q. *What is the 3-A Sanitary Standards Symbol Administrative Council?*

A. (Note: This body is frequently referred to as "The 3-A Symbol Council.") The 3-A Symbol Council authorizes the use of the 3-A Symbol on complying equipment. It also acts appropriately in an unlikely instance of abuse of the Symbol's purpose. Of its eight members, four are representatives of International Association of Milk, Food and Environmental Sanitarians; two are representatives of processors, chosen by the Sanitary Standards Subcommittee of Dairy Industry Committee; and two are representatives of equipment manufacturers, chosen by the Technical Committee of Dairy and Food Industries Supply Association. C. A. Abele, 2617 Hartzell Street, Evanston, Illinois, currently is Secretary-Treasurer of this body.

Q. *How does the 3-A Symbol Council proceed?*

A. Under carefully developed by-laws it:

1. Receives and processes applications from equipment manufacturers desiring to use the 3-A Symbol,
2. Grants authority for the use of the 3-A Symbol on dairy equipment which is acceptably certified by the manufacturer to comply with ap-

plicable 3-A Sanitary Standards,

3. Publishes the names of manufacturers to whom, and for which types of equipment, such authority has been granted,
4. Investigates, and takes appropriate action, in instances of alleged improper or unauthorized use of the 3-A Symbol.

Q. *What does the 3-A Symbol look like?*

A. Like this:



Q. *What is the procedure to be followed in obtaining permission to use the 3-A Symbol?*

A. This is the procedure to follow:

1. Manufacturers desiring to apply the 3-A Symbol to their equipment will request from the Secretary of the Council the proper application forms which contain detailed instructions for each manufacturer to follow.
2. Application can then be made for authorization to use the 3-A Symbol. A separate application is made for each type of equipment on which it is desired to place the symbol. Each application must be accompanied by full data and sworn certification, and also by an initial annual fee for the authorization (\$25.00 for each type of equipment).
3. Within thirty days of receipt of applications which are in order, authorization for use of the 3-A Symbol will be issued. This authorization will be valid for one year.
4. Authorizations may be renewed four times without re-filing applications, except in the event that the existing 3-A Sanitary Standards have been amended; in that case, a new application must be filed.
5. Names of manufacturers to which authorizations have been issued are published bi-ennially in a special section of the Directory of the

Dairy and Food Industrial Exposition. Thousands of re-prints of this section are subsequently distributed to regulatory officials, educational institutions, industry purchasing agents and all other interested parties who request it.

Q. *Once a 3-A Sanitary Standard has been developed, does that mean that no further sanitary refinements in it are possible, probable or expected?*

A. No! As sanitary science, equipment designing and manufacturing efficiencies and dairy processing techniques advance, 3-A Sanitary Standards may be amended or modified at any time, through the same channels of procedure along which the original standard has taken form. Naturally, in a vital, living field of industry, science and technology, progress is a constant goal. Progress comes from, change. The 3-A Sanitary Standards are not limiters of progress.

Q. *Has the 3-A program proved its worth?*

A. Yes. 3-A Standards are cited in the Milk Ordinance and Code of the U. S. Public Health Service. In addition, in the Standards for the Manu-

facture of Frozen Desserts, recommended for adoption by state regulatory agencies by the U. S. Department of Agriculture, 3-A Standards for milk house equipment, HTST practices, plastic and rubber like materials, and all new equipment are specifically required.

Q. *If a person desires more information about specific aspects of the 3-A Sanitary Standards for Dairy Equipment program, where should he turn?*

A. To the headquarters of any national dairy industrial trade association; or, more specifically, to C. A. Abele, Secretary-Treasurer of the 3-A Symbol Council, 2617 Hartzell Street, Evanston, Illinois, on matters relating to the use of the 3-A Symbol; to the Secretary of the Technical Committee of Dairy and Food Industries Supply Association, 1145 19th Street, N. W., Washington, D. C. 20036, on matters pertaining to equipment design or fabrication; and to the Executive Secretary of International Association of Milk, Food and Environmental Sanitarians, P. O. Box 437, Shelbyville, Indiana, to purchase published copies of existing 3-A Sanitary Standards.

LETTER TO EDITOR

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Editor, Journal of Milk & Food Technology:

During recent months several papers have been published in the Journal dealing with the relative value of various tests for determining the bacteriological quality of farm bulk tank milk supplies. In each case, arbitrary count standards have been chosen for each test on the basis of their being equal in terms of the percentage of samples exceeding these values, and the interrelationships between such samples studied. From such studies conclusions are then drawn concerning the relative value of the suggested standards, alone and in various combinations. The soundness of the conclusions drawn may be open to question, however. The purpose of running a bacteriological test on raw milk is presumably to detect deviations from good sanitary conditions and practices. Yet in none of these studies is any indication given as to the relative value of the various tests in this regard.

With the widespread use of farm bulk tanks, there is increasing recognition that the results obtained with the SPC on a fresh sample of milk may be misleading. The large volume of milk passing through milking machines and other equipment so dilutes the bacterial contamination that the SPC may be well below 10,000/ml even when the equip-

ment is obviously unclean! If such conditions are to be detected, it would seem necessary to subject the sample to Preliminary Incubation (PI) to encourage the growth of these contaminating bacteria. While this will not show up all cases of insanitary conditions and/or practices, the experience of a number of producers' organizations and plants has been that the SPC with PI is much superior to the fresh SPC in doing so. Regardless of whether the SPC is low — even below 10,000/ml — a high count following PI indicates a failure in the sanitation program. Surely this is what we as sanitarians should be interested in, rather than whether or not the sample will meet the lenient standards suggested in recent papers.

There is growing evidence that with equipment in good physical condition, properly cleaned and sanitized, it is no problem to produce milk with a low SPC even after PI. At the University of Vermont, milkers receive a bonus if counts remain below 5,000/ml after PI! This suggests that present standards in most areas are so lenient that they can be met by even an indifferent producer who makes half an effort. Should not consideration be given to establishing standards stiff enough to challenge the good producer, and cause the indifferent one either to improve his practices or to get out of milk production?

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