



# Standard Specification for Feeders, Detergent, Rinse Agent, and Sanitizing Agent for Commercial Dishwashing and Glasswashing Machines<sup>1</sup>

This standard is issued under the fixed designation F1021; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

## 1. Scope

1.1 This specification covers detergent feeders, rinse additive feeders, and sanitizing agent feeders intended to automatically maintain the concentration of additives in the wash, recirculated rinse, or non-recirculated rinse water of commercial spray-type dishwashing and glasswashing machines.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 The following safety hazards caveat pertains only to the test methods portion, Section 10, of this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

[A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip \(Withdrawn 2014\)](#)<sup>3</sup>

[D3951 Practice for Commercial Packaging](#)

[F760 Specification for Food Service Equipment Manuals](#)

2.2 *NSF International Standards:*<sup>4</sup>

[NSF No. 29 Detergent/Chemical Feeders for Commercial Dishwashing Machines](#)

[NSF No. 51 Plastic Material and Components Used in Food Equipment](#)

[NSF Food Service Equipment Listing](#)

2.3 *Underwriters Laboratories Standards:*<sup>5</sup>

[UL 73 Motor Operated Appliances](#)

[UL 94 Test for Flammability of Plastic Materials for Parts in Devices and Appliances](#)

[UL 73746C Motor Operated Appliances Standard for Polymeric Materials - Use in Electrical Equipment Evaluations](#)

2.4 *American Society of Sanitary Engineering Standards:*<sup>6</sup>

[ASSE 1001 Pipe Applied Atmospheric Performance Requirements for Atmospheric Type Vacuum Breakers](#)

2.5 *Building Officials and Code Administrators International Standard:*<sup>7</sup>

[BOCA Basic Plumbing Code](#)

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.01 on Cleaning and Sanitation Equipment.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

<sup>4</sup> Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140, <http://www.nsf.org>.

<sup>5</sup> Available from Underwriters Laboratories (UL), 333 Pfingsten Rd., Northbrook, IL 60062-2096, <http://www.ul.com>.

<sup>6</sup> Available from American Society of Sanitary Engineering, 901 Canterbury, Suite A Westlake, OH 44145; ASSE International Chapter of IAPMO, LLC, 18927 Hickory Creek Drive, Suite 220, Mokena, Illinois 60448, <http://www.asse-plumbing.org>.

<sup>7</sup> Available from Building Officials and Code Administrators International, 4051 West Flossmoor Rd., Country Club Hills, IL 60477, <http://www.iccsafe.org>.

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *detergent feeder*—a device that automatically feeds detergents into wash tanks of commercial dishwashing and glasswashing machines.

3.1.2 *rinse additive feeder*—a device that automatically feeds rinse additives into rinse water of commercial dishwashing and glasswashing machines.

3.1.3 *sanitizing agent feeder*—a device that automatically feeds sanitizer into rinse water of commercial dishwashing and glasswashing machines.

### 4. Classification

4.1 *General*—Detergent, rinse additive, and sanitizing agent feeders shall be of the following types and styles as specified.

#### 4.2 Types:

4.2.1 *Type I*—Detergent feeder, concentration sensing or controlling.

4.2.2 *Type II*—Detergent feeder, timed delivery.

4.2.3 *Type III*—Rinse additive feeder, flow/pressure, or electrically activated.

4.2.4 *Type IV*—Rinse additive feeder, timed delivery.

4.2.5 *Type V*—Sanitizing agent feeder, flow/pressure, or electrically activated.

4.2.6 *Type VI*—Sanitizing agent feeder, timed delivery.

#### 4.3 Styles:

4.3.1 *Style I*—Detergent feeder, powder product.

4.3.2 *Style II*—Detergent feeder, liquid product.

4.3.3 *Style III*—Detergent feeder, slurry product.

4.3.4 *Style IV*—Detergent feeder, solid cast product.

4.3.5 *Style V*—Rinse additive feeder, liquid product.

4.3.6 *Style VI*—Rinse additive feeder, solid cast product.

4.4 All detergent, rinse additive, and sanitizing feeders of the same manufacture, classification, and model designation shall be identical to the extent necessary to ensure interchangeability of component parts, assemblies, and spare parts.

### 5. Ordering Information

5.1 Purchasers should select from the types and styles of feeders from this specification and include the following information in the procurement document:

5.1.1 Title, number, and year of this specification. [ASTM F1021-18](#)

5.1.2 Type and style of feeder(s) required.

5.1.2.1 Individual feeders.

5.1.2.2 Combined feeder systems.

5.1.3 Type and manufacturer's model and electrical characteristics of dishmachine or glasswasher for which the feeder is intended.

5.1.4 Manufacturer's certification, when required (see Section 11).

### 6. Materials and Manufacture

6.1 All materials shall be as follows:

6.1.1 Materials used shall be free from defects that would adversely affect the performance or maintainability of individual components or of the overall assembly. Detergent, rinse additive, and sanitizing agent feeders shall meet the material design and construction requirements of NSF No. 29.

6.1.2 *Corrosion-Resistant Steel*—Corrosion-resistant steel shall conform to the requirements of any 300 series stainless steel unless otherwise specified in Specification [A167](#).

6.1.3 *Corrosion-Resisting Material*—Corrosion-resisting material is other than corrosion-resistant steel that is equivalent in the feeder application.

6.1.4 *Plastics*—All plastic materials and components shall conform to NSF No. 51 and UL 94 or [UL 746C](#) as applicable.

6.1.5 *Alternate Materials*—Whenever specific materials are mentioned, it is understood that the use of materials proven to be equally satisfactory from the standpoint of performance shall be permitted.

### 7. Construction Requirements

7.1 *General*—The feeder shall be complete so that when connected to the specified source of power (electrical or water, or both), the unit can be used for its intended function. Detergent, rinse additive, and sanitizing agent supplying housings (hoppers, reservoirs, or containers) shall be designed to minimize splash and spillage during operation and at the time of product replenishment.