

L-T-800B  
September 13, 1976  
SUPERSEDING  
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FEDERAL SPECIFICATION

TUMBLER, DRINKING, (PLASTIC)

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers one type and size plastic drinking tumbler.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specifications:

PPP-B-566 - Boxes, Folding, Paperboard.  
PPP-B-636 - Boxes, Shipping, Fiberboard.

Federal Standard:

FED-STD-123 - Marking for Shipment (Civil Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

(Single copies of this specification and other Federal specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

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(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Standards:

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.

(Copies of Military Specifications and Standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

Laws and Regulations:

21 CFR 121.2510 Polystyrene and rubber-modified polystyrene

(The Code of Federal Regulation (CFR) and the Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for the issuance thereof.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply:

American Society for Testing and Materials (ASTM) Standards:

- D256 - Impact Resistance of Plastics and Electrical Insulating Materials
- D648 - Deflection Temperature of Plastics Under Load
- D790 - Flexural Properties of Plastics

(Application for copies may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

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### 3. REQUIREMENTS

3.1 Standard product. The tumblers delivered under this specification shall be the manufacturer's commercially current standard product, except for any changes necessary to comply with specification requirements.

#### 3.2 Materials.

3.2.1 Plastic. The tumblers shall be made of plastic conforming to 21 CFR 121, Federal Food, Drug, and Cosmetic Act, Food Additive Amendment 21, Code Federal Regulation 121.2510.

3.2.2 Molding compound. Molding compound used for manufacturing the tumblers shall be first grade styrene-acrylonitrile copolymer resin. No scrap material previously molded and reground shall be used.

3.3 Construction and dimensions. The tumbler shall have a ribbed wall designed for stacking and shall conform to the dimensions shown in table I.

TABLE I. Tumbler dimensions

Nominal capacity	Actual capacity	Top outside diameter	Bottom outside diameter	Height	Wall thickness	Bottom thickness
	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum
Fluid ounces	Fluid ounces	Inches	Inches	Inches	Inches	Inches
8.0	7.6	2.535	2.155	3.695	0.055	0.080

3.4 Resistance to dishwashing. Finished tumblers shall show no cracks, scratches, distortions, or any other defects when subjected to dishwashing according to 4.4.1.

3.5 Odor. Tumblers shall not have any objectionable or foreign odor at any time. When tested as specified in 4.4.2, the tumblers shall not develop an objectionable odor.

3.6 Finish and appearance. Finished tumblers shall be clear, colorless, and transparent. The surfaces shall have uniformly high luster produced by molding techniques and not be as the result of application of finish or protective coating of lacquer.

3.7 Izod impact strength. The molding material shall have an izod impact strength of not less than 0.3 foot pounds per inch of width (1/4 inch) when tested in accordance with 4.4.3.

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3.8 Flexural strength. The molding material shall have a flexural strength of not less than 14,000 p.s.i. when tested in accordance with 4.4.4.

3.9 Heat distortion. The minimum heat distortion temperature shall be not less than 185°F. when tested in accordance with 4.4.5.

3.10 Workmanship. The tumblers shall be clean, well made and free from any defects which may affect appearance, sanitation and serviceability, such as, but not limited to, bubbles, flow marks, scratches, cracks, and rough edges.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality conformance inspection. Except as otherwise specified herein, sampling for inspection shall be made in accordance with the provisions set forth in MIL-STD-105.

4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document.

4.2.2 End item inspection. The inspection lot shall consist of all the tumblers offered for inspection at one time. The sample unit shall be one tumbler.

4.2.2.1 Visual examination. An examination shall be made of a tumbler for the defects in table II. The inspection level shall be S-3 with an acceptable quality level (AQL) of 2.5 for major defects and 6.5 for total defects expressed in terms of defects per hundred units.

TABLE II. Classification of defects

Examine	Defect	Classification	
		Major	Minor
End item	Does not have ribbed wall.		X
	Does not stack.	X	
	Finished tumbler not transparent.		X
	Lacks uniformly high luster.		X
	Tumbler has applied finish or coating of lacquer.	X	
	Tumblers dirty.		X
	Tumblers are of defective workmanship, such as, but not limited to having bubbles, flow marks, scratches, cracks, rough edges, or entrapped foreign particles.	X	
	Plastic material does not comply with 3.2.1.	X	

4.2.2.2 Dimensional examination. Examination shall be made of the end item to determine conformance with the dimensional requirements in table I. Any nonconformance with specified dimensions shall be classified as a defect. The inspection level shall be S-3 with an AQL of 4.0 defects expressed in terms of defects per hundred units.

4.2.2.3 End item testing. Each sample tumbler selected in accordance with 4.2.2 shall be tested as specified in 4.4.1, 4.4.2, 4.4.3, 4.4.4 and 4.4.5. Failure of any test shall be cause for rejection of the inspection lot.

4.3 Inspection of packaging. An inspection shall be made to determine that the packaging, packing, and marking requirements, comply with section 5. Defects shall be scored in accordance with table III. For examination of contents the sample unit shall be one shipping container fully prepared for delivery as selected just prior to the closing operations. Sampling shall be in accordance with MIL-STD-105. Defects of closure listed shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be II and AQL shall be 4.0 defects per hundred units.

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TABLE III. Classification of packaging inspection

<u>Examine</u>	<u>Defect</u>
Markings (exterior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose banding, inadequate sealing. Bulging or distortion of container.

#### 4.4 Tests.

4.4.1 Dishwashing. For samples selected in 4.2.3, use standard dishwashing procedure with spray type machines as recommended by the National Sanitation Foundation. Wash cycle shall be 40 seconds at 140°-160°F. and rinse cycle 10 seconds at 180°F. Use recommended amounts of soap. Do not use strong detergents (see 3.4).

4.4.2 Odor. For samples selected in 4.2.3 the tumblers shall be half filled with boiling distilled water. A plate of glass shall be immediately placed over the top of the tumbler. After 5 minutes, the plate of glass shall be removed and the presence or absence of odor shall be determined immediately (see 3.5).

4.4.3 Izod impact strength test. The molding material shall meet the requirements of 3.7 when tested in accordance with ASTM D256. The contractor shall furnish appropriate certification including the actual value obtained.

4.4.4 Flexural strength test. The molding material shall meet the requirements of 3.8 when tested in accordance with ASTM D790. The contractor shall furnish appropriate certification including the actual value obtained.

4.4.5 Heat distortion test. The molding material shall meet the requirements of 3.9 when tested in accordance with ASTM D648. The contractor shall furnish appropriate certification including the actual value obtained.

4.4.6 Identification of styrene-acrylonitrile. For identification, the material shall have the infra-red spectra performed on the acetone soluble and the insoluble portion. The peaks at 4.4u identifies the acrylonitrile and 6.25u the styrene.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation-packaging. Preservation-packaging shall be level A, B, or C as specified (see 6.2).

5.1.1 Level A. Each tumbler shall be wrapped in tissue paper. Twelve wrapped tumblers shall be nested and packaged in a box conforming to PPP-B-636, class domestic, or PPP-B-566. Boxes shall be closed in accordance with the appendix to the applicable specification.

5.1.2 Level B. Each tumbler shall be wrapped in tissue paper and six wrapped tumblers nested. Two stacks of wrapped and nested tumblers (12 tumblers) shall be packaged in a box conforming to PPP-B-636, class domestic or PPP-B-566, style I, type A, class a, variety 1. Closure of the box conforming to PPP-B-636 shall be in accordance with method I of the appendix to the specification. Closure of the box conforming to PPP-B-566 shall be in accordance with the appendix to the specification.

5.1.3 Level C. Tumblers shall be packaged in a manner that will afford adequate protection during shipment from supply source to the first receiving activity.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

5.2.1 Level A packing. One hundred and forty-four tumblers, packaged as specified in 5.1, shall be packed in a box conforming to PPP-B-636, V3c or V3s. The box shall be closed, waterproofed and reinforced with bands of filament tape in accordance with the appendix of PPP-B-636.

5.2.2 Level B packing. Tumblers shall be packed as specified in 5.2.1 except the box shall conform to type SF, class domestic of PPP-B-636.

5.2.3 Standard pack (civil agencies). Seventy-two tumblers packaged as specified in 5.1.2, shall be packed in a box conforming to PPP-B-636, type SF, class domestic. Closure shall be in accordance with method I of the appendix of PPP-B-636.

5.2.4 Level C. The tumblers shall be packed to insure carrier acceptance and safe delivery at destination in containers complying with the rules and regulations applicable to the mode of transportation.

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5.3 Standard pack (civil agency procurements). The standard pack for civil agency procurements shall be as specified in 5.1.2 and 5.2.3 (see 6.3).

5.4 Marking. Marking shall be in accordance with 5.4.1 or 5.4.2 as specified (see 6.2).

5.4.1 Civil agencies. In addition to markings required by the contract or order, the shipping containers shall be marked in accordance with FED-STD-123.

5.4.2 Military activities. In addition to markings required by the contract or order, the shipping containers shall be marked in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use. The tumblers are intended to be used for drinking liquids for human consumption.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following in procurement documents:

- (a) Title, number and date of this specification.
- (b) Level of packaging and packing (see 5.1 and 5.2).
- (c) Marking required (see 5.4).

6.3 Standard pack for civil agencies. The standard pack requirements in 5.3 are intended for use in procurements of stores stock replenishments. Procuring officers should use the standard pack requirements when it is known that the material will be shipped from a supplier to a domestic warehouse, supply depot, or intermediate storage point for temporary storage, subsequent issue or shipment to eventual user.

### Custodians:

Army - GL  
Navy - SA  
Air Force - 99

### Preparing activity:

Army - GL

### Civil Agency Coordinating Activity:

GSA - FSS

### Review activities:

Army - MD  
Navy - MS

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See Section 2 of this specification to obtain extra copies and other documents referenced herein. Price 30 cents each.